Testing the Test: PISA's Role in the Evolving Human Development Agenda

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Abstract

Over the past thirty years there has been a noticeable increase in the number of national and international educational assessments given to students each year. Countries have become increasingly willing to evaluate and compare national education systems through these tests, and some international assessments have even been considered as potential tools to measure progress towards global human development goals in education. This thesis uses the Program for International Student Assessment (PISA)—one of the most publicized and prominent international assessments—to identify the forces that led to the rise in educational testing, and to understand the potential role of PISA in the current human development agenda. I find that the rise in testing is largely to due to several interrelated forces: 1) globalization and its network of international organizations and trade ties, 2) the prominence neoliberalism, 3) the bureaucratic tendency to emphasize rationalized, scientific policymaking, 4) improved technology, and 5) the belief that education is a central tenet of a nation's economic competitive advantage. These forces make PISA a durable international initiative, but also one that can cause stakeholders to adopt an oversimplified view of education and development. Though PISA does have beneficial aspects, it is important that PISA does not become the principal standard for understanding and assessing global development goals for education.

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Introduction

Primary and secondary education have been of central importance to national governments for decades, but it seems as if competition and comparisons between national education systems have escalated in recent years. The world recently experienced a period of profound globalization that intensified the contest between nations to both produce and attract the world's brightest workers, thus national governments are placing ever greater emphasis on their education systems, and paying special attention to how their system compares within a broader international context. During this same period, we have also witnessed the international community come together twice to produce comprehensive and ambitious global development agendas: the Millennium Development Goals for 2015 and the Sustainable Development Goals for 2030. These agendas were adopted as the central development initiatives of the United Nations, making them the most unified and significant global efforts and human development that the world has ever seen.

This thesis seeks to examine this international intersection between development, cooperation, and competition in education. This connection is readily observable through the phenomenon of international tests and assessments, which have become more prevalent in recent years; it has even been suggested in official United Nations reports that international assessments can be utilized as tools to track progress toward the Sustainable Development Goals. Using the Program for International Student Assessment (PISA) as a case study, this thesis examines the forces that led to the creation of the current 2030 Development Agenda, and the global trends that brought about the acceptance and subsequent rise of educational testing. The first section details the history of development as a concept, describing various models of development and

the transition to the notion of "human development" that laid the foundation for the 2030 Development Agenda. It also analyzes the role that education has played as a component of development throughout this evolution, and describes the ongoing debate over the extent to which educational goals should be quantitative or qualitative. In the 2030 Development Agenda, the role of education is expressed by Sustainable Development Goal 4 (SDG 4), which stresses the need for quality and equity in education across the world.

The next section explores the rise of testing and international assessments—paying special attention to the creation of PISA. Analysis of scholarly opinion indicates that the proliferation of assessments stems from the intermingling of several phenomena: 1) globalization and its network of international organizations and trade ties, 2) the prominence neoliberalism, 3) the bureaucratic tendency to emphasize rationalized, scientific policymaking, 4) improved technology, and 5) the belief that education is a central tenet of a nation's economic competitive advantage.

The discussion then moves to critiques, praise, and implications of participating in PISA based on the experiences of countries in Europe, Asia Pacific, and Latin American, followed by an analysis of the potential connections between PISA and the Sustainable Development Agenda. Here we clearly see the connection between development, cooperation, and competition; as an international assessment that releases scores for each participating nation based on student performance, PISA and its results create pressure to outperform other nations. At the same time, scholars, policymakers, and other key stakeholders are using PISA as a tool to measure indicators for SDG 4, and to evidence the need for policies that promote equity and quality in education. Overall, there is potential for PISA to play a useful role in realizing the

Sustainable Development Goals, but the positive aspects of PISA are often confounded by the misuse and oversimplification of PISA data.

Finally, the last sections recognize that the context in which PISA and the 2030 Development Agenda were created has already changed; it can be argued that recent events indicate that the tide of globalization might be waning, which threatens international cooperation and development. After considering the increasing rates of PISA participation over time, and the number of forums, initiatives, and national consultations that have convened with the sole focus of aiding the goals for education set by the 2030 Agenda, I conclude that both PISA and SDG 4 have longevity despite current uncertain times. Furthermore, this conclusion is strengthened by the intersection between development and competition. The competitive and comparative nature of PISA, the widespread media attention it receives, and the perception that education is central to developing economic competitive advantage (via human capital) keeps education systems and test scores at the forefront of policymakers' minds. Overall, this thesis offers reason to believe that PISA and SDG 4 reinforce each other in a way that gives both initiatives staying power. Thus the UN must ensure that it does not overemphasize the role and value of PISA by making it a central metric in the development agenda; PISA should be one of many possible tools for countries to utilize when assessing their progress toward achieving development goals in education.

Literature Review: The Evolution of Development

Prior to the 1970s, development was essentially synonymous with economic growth in the policymaking and academic spheres.[1] However, recent years have seen an increasingly clear

[1] Giang Dang and Low Sui Pheng. *Infrastructure Investments in Developing Economies: The Case of Vietnam*. *Springer* (2015): 12.
[2] Sandra Halperin "Development Theory" *Encyclopedia Britannica*. Last Updated: Apr. 2013. Web. Accessed 04 Mar. 2017. <https://www.britannica.com/topic/development-theory>.

distinction between growth and human development, and a growing emphasis on creating a human-centered international development agenda. As a result, scholars and policy experts are continuously redefining and modifying the integral components and goals of human development. This literature review seeks to understand the evolving role of education in human development, and address varying scholarly opinions on the extent to which education should be a defining element in the development discussion.

This review will start by detailing how the concept of development has changed over time, leaving us with the current discussion on development through the lens of the United Nations Development Program's (UNDP) Human Development Index (HDI) and the two international human development agendas (the Millennium Development Goals and the Sustainable Development Goals). While it is generally accepted that education should play a part in assessing human development, some scholars argue that education is weighted too heavily in certain development indicators—like the HDI. Another camp of scholars believes the educational goals and criteria set by the development agenda create perverse incentives that do not truly benefit students. Once we understand the past and present goals in human development, and appreciate the discussion surrounding the part that education should play, we can properly assess the role of PISA within the current human development agenda.

Theories of Economic Development

Traditionally, development was measured by certain standards of economic growth, specifically GDP. The first generation of economic development models emerged following World War II to influence newly independent nations as they organized their economies.[2] These theories focused on injecting capital into the economy to generate GDP growth. Thus, if a

[2] Sandra Halperin "Development Theory" *Encyclopedia Britannica*. Last Updated: Apr. 2013. Web. Accessed 04 Mar. 2017. <https://www.britannica.com/topic/development-theory>.

country's GDP was increasing, it was on the right track to development. The underlying theme in these theories mirrored the traditional economic philosophy that income could be used as a measurement of utility. It is quite understandable that metrics like income and GDP were the long-reigning indicators of development; they are quantifiable, comparable, and objective. As a result, policies that fostered measureable increases in economic growth were considered inherently good whether or not they accounted for factors like inequality or poverty.

One of the most influential proponents of this view was Walt W. Rostow, an American economic historian who authored the book, *The Stages of Economic Growth: A Non-Communist Manifesto*. This book proposed a "linear-stages-of-growth model" which outlined five basic stages that each society must pass through: 1) Traditional society 2) Pre-conditions for take-off 3) Take-off 4) Drive to maturity and 5) Age of high mass consumption. This model equated development with economic productivity, consumption, and industrialization. Essentially, growth was the springboard from which other policy objectives and goals could be achieved.

Rostow's model provided a foundation for modernization theory. Similarly, modernization theory posited that development took place in stages, the last of which was reached by achieving an industrialized, capitalist economy—like Western Europe and the United States. The implicit aim of such theories was to guide the development of the post-WWII world along capitalist lines, so proponents of modernization theory emphasized increased savings, investment, international trade, competition, productivity, and disseminating technology as keys for growth in developing countries.[3] According to modernization theorists, developing societies would be compelled to imitate and achieve the capitalist economic model when they came into contact with North American and Western European nations. Then, as the economies of these

[3] Sandra Halperin "Development Theory" *Encyclopedia Britannica*. Last Updated: Apr. 2013. Web. 04 Mar. 2017. <https://www.britannica.com/topic/development-theory>.

developing nations grew, which would necessitate increases in—some—citizen's income, more resources would be available to benefit the whole society, either by "market-driven trickledown effects, or by state-driven social policy."[4] Essentially, scholars believed that economic growth must come first before citizens could have the stability, comfort, and time to focus on other 'less central' objectives.

Over time, however, the strength of the link between economic growth and welfare came to be questioned. Towards the end of the "golden age of the real per capita income metric"—identified as the 1950s to 1970s—it became apparent that so-called "Third World" countries were not passing through the stages of development that mirrored western nations; they were remaining underdeveloped.[5] Some academics from developing countries began to argue that former colonial rule had structured many developing nations specifically for the extraction of raw materials and cash crops to supply the manufacturing sectors of developed countries. This perspective came to be known as "dependency theory," and its proponents argued that—in contrast to modernization theory— free trade and foreign investment took place in a fundamentally unbalanced system that served to perpetuate the dominance of former imperial powers.

A similar theory elaborated on this notion by asserting that the post-colonial setup created an "international division of labor."[6] This "world systems theory" described a global capitalist division of labor that pushed developing nations to the "periphery" and reinforced their

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[4] Matthias Sant'Ana. "The Evolution of the Concept of Development: From Economic Growth to Human Development." *Centre De Philosophie Du Droit (CPDR) – UCLouvain Working Paper-PAI VI/06-FDI/HD-6* Deliverable FDI 1.2. – Part II (2008): 5.
[5] Matthias Sant'Ana. "The Evolution of the Concept of Development: From Economic Growth to Human Development." *Centre De Philosophie Du Droit (CPDR) – UCLouvain Working Paper-PAI VI/06-FDI/HD-6* Deliverable FDI 1.2. – Part II (2008): 8.
[6] Sandra Halperin "Development Theory" *Encyclopedia Britannica*. Last Updated: Apr. 2013. Web. 04 Mar. 2017. <https://www.britannica.com/topic/development-theory>.

impoverished status as they supplied the raw materials for the industrialized (western) "core." Dependency theory and world systems theory led states to enact interventionist and protectionist economic policies aimed at supporting domestic industries by making their exports more competitive. Both of these theories emphasized the international context of development, and asserted that unequal trade relations would continue to inhibit growth in developing countries. According to these theories, rather than following the western development models, developing nations should end their exploitation and dependence by breaking ties with the developed world, and closing off their economies to focus on internal development. The prominence of these theories in the 1970's signaled the need for an ideological shift regarding the pursuit of development.

However, the 1980s saw a resurgence of capitalist market-oriented ideology, which came to be known as the neoclassical counterrevolution or neoliberalism.[7] Neoliberalism was a response to the stagnating growth that many countries experienced when they adopted protectionist policies and cut themselves off from foreign trade. This counterrevolution promoted free markets, foreign direct investment (FDI), deregulation, privatization of public firms, trade liberalization, and austerity measures that limited government spending.[8] Essentially, neoliberalism assumed state intervention inhibited growth, and market forces should be left alone to appropriately allocate resources and spur development. The neoliberal ideology was eventually adopted and propagated by the world's most powerful international institutions: the World Bank and the International Monetary Fund (IMF). As a result, many developing nations were forced to embrace open markets and international trade in order to receive loans and aid.

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[7] Sandra Halperin "Development Theory" *Encyclopedia Britannica*. Last Updated: Apr. 2013. Web. 04 Mar. 2017. <https://www.britannica.com/topic/development-theory>.
[8] E. Wayne Nafzinger. *Economic Development*. Chapter 5, Ed 4. (Cambridge: Cambridge University Press 2005).

Neoliberalism dominated the development discussion throughout the 1980s and remained prominent in the 90s, but this model has been subjected to harsh criticism in recent years. Scholars and policy makers have criticized the neoliberal model for inciting extreme inequality by transferring wealth from the public purse to private enterprises, for imposing a one-size-fits-all development model on nations with vastly different historical and institutional contexts, and for failing to realize expected economic growth.[9]

At this critical juncture, amidst growing criticism of neoliberalism—yet taking influence from this dominant ideology—the development discussion began to shift yet again. Scholars and policymakers realized that regardless of whether or not a country was "developed," high growth rates did not necessarily bring about equitable growth, nor did they guarantee improvements in the quality of citizens' lives. The conversation evolved from a purely economic one that emphasized the efficiency of the market in distributing the benefits of growth, to consider a policy oriented approach; scholars started to ask how political institutions and processes could facilitate development. In addition, many scholars emphasized the fact that that measuring GDP growth alone failed to illuminate substantial discrepancies in the distribution of wealth within a country. Studies began to show that *relative* income (as opposed to absolute income) plays a major role in an individual's happiness and perception of their own well-being, which made it clear that distribution of wealth mattered as much as outright increase of wealth.[10]

In addition, other components of individual welfare started to be considered. Scholars concluded that if the ultimate goal was to measure utility, then it should be possible to find and define certain goods that would be valued by and beneficial to all citizens; thus security,

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[9] Giang Dang and Low Sui Pheng. *Infrastructure Investments in Developing Economies: The Case of Vietnam*. *Springer* (2015): 19.
[10] Kate Vyborny and Nancy Birdsall. *Controversies in Globalization: Contending Approaches to International Relations*, ed. Peter M. Haas, John A Hird (Los Angeles, CA: CQ Press, 2012), 59.

equality, good health, and access to education became important considerations along with income. Solely pursuing income maximization would, at some point, drain resources and inhibit the pursuit of these other beneficial 'goods.' These realizations resulted in a more comprehensive understanding of welfare and the international context of development, which eventually led to the world's modern discussion on human development.

The Inception of Human Development

In 1990, the UNDP officially introduced the concept of 'human development'.[11] This new model changed both the content of the conversation about development, and the standards by which it was measured. To ensure the viability and applicability of the human development model, the UNDP created the Human Development Index (HDI) and has issued Human Development reports ever since. These reports analyze various themes encompassed in human development, such as poverty, gender equality, the environment, and cultural liberties.

The opening lines of the first report were an articulate culmination of the shifts in thought surrounding development and welfare:

"People are the real wealth of a nation. The basic objective is to create an enabling environment for people to live long, healthy and creative lives. This may appear to be a simple truth. But it is often forgotten in the immediate concern with the accumulation of commodities and financial wealth."[12]

With the UNDP's creation of the HDI in 1990, the scope of development vastly expanded. The HDI ensured that development would include more than expansion of income and GDP growth; it would focus on people, and increasing the opportunities available to them. While

[11] UNDP. *Human Development Report 1990: Concept and Measurement of human development*. New York: Oxford University Press. (1990): iii.

[12] UNDP. *Human Development Report 1990: Concept and Measurement of human development*. New York: Oxford University Press. (1990): 9.

this new conceptualization of human development was certainly more extensive, it would not have been useful or implementable without measurable criteria and standards. This emphasis on measurable standards to track improvement and allow comparison signifies the lasting influence of neoliberal thought. The initial standard for human development resided in its definition. In its first report, the UNDP defined human development as follows:

"Human development is a process of enlarging people's choices. The most critical ones are to lead a long and healthy life, to be educated and to enjoy a decent standard of living. Additional choices include political freedom, guaranteed human rights and self-respect…"[13]

UNDPs focus on expanding choices and capabilities for all humans has not changed significantly since the first report.[14] The Human Development Reports (HDRs) emphasize the lives and capabilities of individuals (not direct policy suggestions or expenditure targets), and treat people as agents that must actively participate in the process. With this philosophy in mind, it is understandable that every Human Development Report has mentioned education and access to knowledge as a central dimension of human development.[15] Education is one of the most basic strategies for creating choices, especially in an individual's career. Many scholars do not directly debate the central role of education in achieving the goals of human development as defined by the UNDP; most of the literature focuses on evaluating and critiquing the UNDP's Human Development Index (the basis for the Human Development Reports), the Millennium Development Goals (MDGs), the Sustainable Development Goals (SDGs) and the incentives they have created.

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[13] UNDP. *Human Development Report 1990: Concept and Measurement of human development*. New York: Oxford University Press.(1990): 10.
[14] Sabina Alkire. *Human Development Research Paper 2010/01 Human Development: Definitions, Critiques, and Related Concepts*. Rep. United Nations Development Programme, (2010):12-13.
[15] Sabina Alkire. *Human Development Research Paper 2010/01 Human Development: Definitions, Critiques, and Related Concepts*. Rep. United Nations Development Programme, (2010): 14.

According to the UNDP, the Human Development Index is "a summary measure of average achievement in key dimensions of human development: a long, healthy life, being knowledgeable and having a decent standard of living."[16] The actual HDI number given to a country is a mean of normalized indices for each of three dimensions: life expectancy, education, and gross national income (GNI). The education dimension is comprised of a mean of years of schooling for adults ages 25 and up, and expected years of schooling for children of school entry level age. In addition, the Human Development Reports Office (HDRO) also reports a few other indices on key issues of human development, such as inequality, gender disparity, and human poverty.

Part of the HDI's continued prominence and success in framing the human development discussion is due to its multidimensional nature; the index has enough indicators to produce a comprehensive assessment (by giving more information than GDP does), but not so many that the index is hard to interpret and gain insights from.[17] Furthermore, the Human Development Reports and the HDI have informed the setting of the Millennium Development Goals and the Sustainable Development Goals, which ensures their continued eminence. According to Sabina Alkire, it is "clear beyond any reasonable doubt that one root of the MDGs reached directly back to the 1990 Human Development Report," which called for "global targets for human development" that could foster a cooperative international environment and create political pressure to meet these goals.[18] Both the Millennium Development Goals and the Sustainable

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[16] UNDP. "Human Development Index (HDI)." *Human Development Index (HDI) | Human Development Reports*. United Nations Development Programme, 2015. Web. 04 Nov. 2016. <http://hdr.undp.org/en/content/human-development-index-hdi>.

[17] Matthias Sant'Ana. "The Evolution of the Concept of Development: From Economic Growth to Human Development." *Centre De Philosophie Du Droit (CPDR) – UCLouvain Working Paper-PAI VI/06-FDI/HD-6* Deliverable FDI 1.2. – Part II (2008): 9.

[18] Sabina Alkire. *Human Development Research Paper 2010/01 Human Development: Definitions, Critiques, and Related Concepts*. Rep. United Nations Development Programme, (2010): 49.

Development Goals were produced through the United Nations, which essentially committed all 193 UN member nations to pursuing and achieving these agendas. As a result, the HDI, MDGs, and SDGs are the focal points on which the current discussion on education as a part of human development is framed.

The Role of Education in the Discussion on Human Development

The HDI, MDGs and SDGs provide a few specific targets that assume the proper role of education in human development. As mentioned earlier, the HDI has an education dimension that is the mean years of schooling for adults ages 25 years and older, and expected years of schooling for children of school entry level age. The second goal of the Millennium Development Goals was to "achieve universal primary education."[19] The indicators used to measure this goal were the net enrollment ratio in primary education, the proportion of pupils starting grade 1 who reached grade 5, and the literacy rate of 15-24 year-olds. Lastly, the successor to the MDGs, the Sustainable Development Goals, shifted the focus from pure access to education to "Quality Education."[20]

The new emphasis on quality is primarily addressed under Goal 4 of the SDGs: "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all."[21] Goal 4 adds to the original universal primary education goal by including targets that address "early childhood development, care, and preprimary education," "equal access for men and women to affordable and quality technical, vocational, and tertiary education," and "the number

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[19] Millennium Project. "UN Millennium Project | About the MDGs." *UN Millennium Project | About the MDGs*. 2006. Web. 20 Nov. 2016.< http://www.unmillenniumproject.org/goals/>.
[20] United Nations. "Goal 4." *United Nations Sustainable Development Goals*, Web. 20 Nov. 2016. <http://unstats.un.org/sdgs/report/2016/goal-04/>.
[21] United Nations. "Goal 4." *United Nations Sustainable Development Goals*, Web. 20 Nov. 2016. <http://unstats.un.org/sdgs/report/2016/goal-04/>.

of youth and adults who have relevant skills for employment and decent jobs."[22] Some official indicators used to measure Goal 4 are the participation rate in organized learning one year before the official primary school entry age, participation rate of youth and adults in formal and non-formal education and training, and percentage of the population in a given age group achieving a level of efficiency in literacy and numeracy skills.[23] As signified by the different indicators used in the HDI, MDGs, and SDGs, the goals for education within human development have changed over time.

Though the HDI, MDGs, and SDGs are the focal points that frame the current discussion on education as a component of human development, they have drawn various criticisms from experts and scholars. One camp of scholars criticizes the HDI by claiming that it gives too much weight to education. Another camp criticizes the HDI and the MDGs for over-emphasizing access to education at the expense of quality and equity in education. There are also scholars that defend the HDI and MDGs as critical initiatives for developing a unified and multidimensional global agenda for human development. The next sections of this review will focus on understanding these camps of scholars, and discussing how they informed the debate surrounding the post-2015 discussion on human development and affected the creation of the Sustainable Development Goals.

I. Education and the Human Development Index

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[22] United Nations. "Sustainable Development Goal 4." *Sustainable Development Knowledge Platform*. United Nations Department of Economic and Social Affairs, Web. 20 Nov. 2016 <https://sustainabledevelopment.un.org/sdg4>.

[23] Inter-Agency and Expert Group on SDG Indicators. *Final List of Proposed Sustainable Development Goal Indicators* (2013). Web. 20 Nov 2016. <https://sustainabledevelopment.un.org/content/documents/11803Official-List-of-Proposed-SDG-Indicators.pdf>. See Table 2 for a full list of SDG 4 targets.

Though there are several criticisms of the HDI, one of the most common criticisms is that education is overvalued in the determination of HDI scores. The HDI has also been criticized for its choice of variables (some experts claim that more indicators for well-being—like political freedoms, and human rights—should be included), and for oversimplifying human development. As mentioned earlier, the HDI is a mean of three indices: GDP per capita, life expectancy, and education. Thus the HDI places equal weight on each of the three indices, without providing a satisfactory rationale for why. Consequently, the weightings for these three indices seem "arbitrary" to some, which calls into question the objectivity and usefulness of the index.[24] Because of this, some scholars have concluded that the HDI scores and country rankings are "illustrative rather than evaluative."[25]

Furthermore, for each indicator within the index, a maximum and minimum level are established, and each country is scored based on the percentage of the maximum level that the country has achieved. With the two indicators for education being the years schooling for adults ages 25 years and older, and expected years of schooling for children of school entry level age, properly deciding the maximum education level becomes a problem. Should countries aim to send every one of their students to a graduate school to get the maximum level? Is setting a less lofty maximum, like 100% of students passing high school, more appropriate, even if it means that countries with an average above that will not see any additional benefit to their HDI ranking? Prior to 2010, this was a serious concern with the HDI. Before 2010 each dimension

[24] Omar Chowdhury. "Human Development Index: A Critique." *The Bangladesh Development Studies* (1991); 19(3): 125.
[25] Omar Chowdhury, Omar. "Human Development Index: A Critique." *The Bangladesh Development Studies* (1991); 19(3): 125.

was given an upper bounds and lower bounds based on fixed thresholds.[26] This meant, for example, that since the life expectancy max was set at 85, if a country had an average life expectancy above 85 it would not receive any additional increase in HDI score. By establishing caps on the dimensions, HDI analysts presupposed that there are thresholds beyond which improvements to life expectancy, education, and/or GNI did not contribute to human development; this method seemed justified when considering theories on marginal utility. In addition, establishing a threshold would encourage countries to devote resources to relatively lacking dimensions once the threshold for one dimension was reached, which would foster an even more well-rounded approach to human development.

In practice, however, identifying and defining such thresholds, proved to be contentious and difficult. In 2010 the UNDP introduced several important changes to the HDI one of which redefined the upper and lower bounds.[27] This new HDI eliminated the caps on dimensions and established the upper bounds as the "observed maxima over the time series between 1980 and the most recent year available."[28] Going back to our example, this meant that instead of the upper bounds being fixed at 85, if the highest national average life expectancy is 87, then 87 will be the upper bounds for the first dimension of the HDI that year. Thus the dimensions are now based on what has been obtained rather than a fixed maximum established by analysts. As previously mentioned, several changes to the HDI took place in 2010, including changes in the indicators used to measure "knowledge," so it is difficult to assess the direct impact that the change in

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[26] Jeni Klugman, Francisco Rodríguez, and And Hyung-Jin Choi. "*Human Development Research Paper 2011/01: The HDI 2010: New Controversies, Old Critiques*." United Nations Development Programme, (2011): 3-4

[27] Jeni Klugman, Francisco Rodríguez, and And Hyung-Jin Choi. "*Human Development Research Paper 2011/01: The HDI 2010: New Controversies, Old Critiques*." United Nations Development Programme, (2011): 1.

[28] Jeni Klugman, Francisco Rodríguez, and And Hyung-Jin Choi. "*Human Development Research Paper 2011/01: The HDI 2010: New Controversies, Old Critiques*." United Nations Development Programme, (2011): 16.

bounds setting has had on the role of education. However, this represents an instance in which the HDI has evolved to address a common critique from scholars.

Ultimately, most critics do not try to claim that education is not important in human development, but they do question the assumption that education is critical in any human development endeavor, so it is not necessary to explain the reason for its prominence or weight. This critique is especially salient in light of another critique that is often posed: the correlation between HDI rankings and GDP comparisons is so high that it is questionable whether the HDI really gives any novel, useful insight.[29] If it is possible that a simple measure like GDP can provide rankings that are similar to a multidimensional index like HDI, it is necessary to justify why those other dimensions need to be included.

One defense of the HDI's utility over GDP is that it enables analysts, policy makers, scholars, and average citizens alike to know what "drives improvements over time in well-being" and understand how inequality across countries has evolved.[30] The improvements over time in HDI and growth rates of per-capita income differ significantly, and certain variables (like inflation, trade openness, and the rule of law) affect these measures in different ways. Consequently, the multifaceted nature of the HDI and the variables that affect it fundamentally altered the conversation about development, and the policy implications that inevitably followed. As Francisco Rodriguez—former head of research at the UN Human Development Report Office—stated, "reports have often found that the best policies for enlarging people's choices are

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[29] Justin Wolfers. "What does the Human Development Index measure?" *Freakonomics*, 22 May 2009. Web. 16 Oct. 2016. < http://freakonomics.com/2009/05/22/what-does-the-human-development-index-measure/>.

[30] Francisco Rodriguez. "Another Perspective on the Human Development Index" *Freakonomics*, 01 June 2009. Web. 16. Oct. 2016. <http://freakonomics.com/2009/06/01/another-perspective-on-the-human-development-index/>.

not necessarily the best ones for raising per capita incomes."[31] The UNDP's page on the HDI reflects Rodrigues' sentiment, stating that "the HDI was created to emphasize that people and their capabilities should be the ultimate criteria for assessing development of a country, not economic growth alone."[32] For experts in this camp, it is crucial to understand that human development emphasizes *enlarging people's choices*, and there are numerous ways to do that. The HDI is an important, though imperfect, reflection of this understanding; it has shifted the focus from pure economics to include other important dimensions of well-being.

On the other hand, some experts defend the HDI by claiming its simplicity is a distinguishing factor that has led to its lasting impact. These scholars argue that the HDI's multi-dimensional composite index provides a metric that is easy to comprehend and interpret for practical use. Other attempts at measuring human development have included various social indicators and surveyed data on assessments of well-being, but both of these methods required gauging a host of dimensions that were often subjective and hard to measure, making it difficult to gain operational insights. Relative to previous attempts, the HDI's simplicity made it a much more viable replacement of GDP, because it creates a practical point of reference for scholars and policymakers alike.[33] By providing a small number of specific dimensions, the HDI allows policymakers to prioritize certain objectives and assess their progress based on HDI rankings and Human Development Reports. While some critics claim that the indicators chosen by the UNDP are arbitrary and unjustified, the UNDP does not claim that the HDI is a complete, inclusive

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[31] Francisco Rodriguez. "Another Perspective on the Human Development Index" *Freakonomics*, 01 June 2009. Web. 16. Oct. 2016. <http://freakonomics.com/2009/06/01/another-perspective-on-the-human-development-index/>.

[32] UNDP. "Human Development Index (HDI)." *Human Development Index (HDI) | Human Development Reports*. United Nations Development Programme, 2015. Web. 04 Nov. 2016. <http://hdr.undp.org/en/content/human-development-index-hdi>.

[33] Matthias Sant'Ana. "The Evolution of the Concept of Development: From Economic Growth to Human Development." *Centre De Philosophie Du Droit (CPDR) – UCLouvain Working Paper-PAI VI/06-FDI/HD-6* Deliverable FDI 1.2. – Part II (2008): 9.

analysis of human development. The UNDP has stressed that additional indicators and information must be considered in order to gain a fuller picture of a country's level of human development."[34] While critiques of the HDI, its dimensions, and its calculations are certainly valid, they assume that the HDI is meant to be the end of the discussion on human development, when really, it was meant to start and cement the transition from a GDP-based rhetoric to a comprehensive, human-centered approach.

The critiques and defenses of the HDI have a few implications for the role of education in human development. First, any defense of the HDI also defends the significance of education as a component of human development. As a result, the indicators measured by the "knowledge" dimension of the HDI signify what is important and valued in education. As mentioned earlier, the HDI has gone through several changes since its introduction in 1990, including changes in the metrics used to measure education. Table 1, taken from Jeni Klugman, Francisco Rodriguez, and Hyung-Jin Choi's Human Development Research Paper published in 2011, outlines these

[34] UNDP. "Human Development Index (HDI)." *Human Development Index (HDI) | Human Development Reports*. United Nations Development Programme, 2015. Web. 04 Nov. 2016.

changes.[35]

Table 1. Changes to the Human Development Index, 1990-2010

HDR	Bounds	Indicators			Treatment of Income	Aggregation Formula
		Health	Education	Income		
1990	Observed	Life expectancy at birth (UN Population Division)	Adult literacy rate (25+) (UNESCO)	Real GDP per capita PPP $ (log) (World Bank)	Logarithmic transformation with a cap	Arithmetic mean
1991 ~ 1993			(2/3)Adult literacy rate (UNESCO) (1/3)Mean years of schooling (UNESCO)	Real GDP per capita PPP $ (adjusted) (World Bank)	Atkinson formula with threshold value derived from poverty line	
1994	Fixed		(2/3)Adult literacy rate index (UNESCO) (1/3)Mean years of schooling index (UNESCO)		Atkinson formula with threshold value derived from global average	
1995 ~ 1998			(2/3)Adult literacy rate index (UNESCO) (1/3)Combined gross enrolment ratio index with a cap starting to bind in 1996 (UNESCO)			
1999				Real GDP per capita PPP $ (log) (World Bank)	Logarithmic transformation with a cap starting to bind in 2001	
2000 ~ 2009			(2/3)Adult literacy rate (15+) index (UNESCO) (1/3)Combined gross enrolment ratio index with a cap starting to bind in 1996 (UNESCO)			
2010	Upper: Observed Lower: Fixed		(1/2)Mean years of schooling index (Barro-Lee) (1/2)Expected years of schooling index (UNESCO)	Real GNI per capita PPP $ (ln) (World Bank)	Natural logarithmic transformation without a cap	Geometric mean

Note: GDP per capita was "adjusted" using Atkinson formula in the period from 1991 to 1998.

Originally, the education dimension was simply measured by adult literacy rates. Though literacy rates were a central component for many years, the changes in 2010 resulted in the metrics that are currently used to form the education dimension of the HDI: mean years of schooling and expected years of schooling. The main purpose of replacing the literacy rate with mean years of schooling was to ensure that the HDI and its indicators stay relevant. Since 1990, literacy rates have greatly increased; according to UNESCO, over 40% of countries with data in 2012 had an adult literacy rate of 95% or higher, and some developed countries no longer collect data on basic literacy.[36] Essentially, literacy has been a strong focus for many years now, and as younger generations have risen through the education systems of both developed and developing nations, literacy rates have increased to the point of becoming outdated and less differentiating

[35] Jeni Klugman, Francisco Rodríguez, and And Hyung-Jin Choi. "*Human Development Research Paper 2011/01: The HDI 2010: New Controversies, Old Critiques*." United Nations Development Programme, (2011): 4.

[36] UNESCO Institute of Statistics. "Literacy." *Literacy | UNESCO UIS*. UNESCO, (2012). Web. 10 Nov. 2016. < http://uis.unesco.org/en/topic/literacy>.

than before. The mean years of schooling is meant to measure the education of adults, and it is a broadly accepted metric that is measured more frequently, has broader coverage, and is often more informative than the literacy rate.[37]

The 2010 changes to the HDI also differentiated between adult and youth education by changing the second metric, the gross enrollment ratio, to expected years of schooling. The metric is still based on enrollment rates and essentially represents the average number of years of education that children today are expected to obtain in adulthood. Thus the indicators for education and knowledge are both measured in years, and their differentiation between adults and children allows the dimension to account for the education of current and future generations. Though some scholars suggest that cross-national assessments of science, math and reading could be quality indicators of education, scores are often available for a limited number of countries, which made the use of test scores as indicators unfeasible in 2010. Since 2010, years of schooling has been a central data point for calculating the HDI, making it an essential lens through which education and development have been viewed. As a result, increasing the average number of years that students spend in school has been a key factor in increasing a nation's HDI score.

II. Education and the Millennium Development Goals

There are many trends, factors, policies, and summits that have been credited for influencing the creation of the Millennium Development Goals (MDGs), and the HDI was certainly one of them. Created in 2000—to be achieved by 2015—the MDGs consisted of eight international goals sponsored by the UN, described as:

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[37] Jeni Klugman, Francisco Rodríguez, and And Hyung-Jin Choi. "*Human Development Research Paper 2011/01: The HDI 2010: New Controversies, Old Critiques*." United Nations Development Programme, (2011): 18.

"The world's time-bound and quantified targets for addressing extreme poverty in its many dimensions—income poverty, hunger, disease, lack of adequate shelter, and exclusion—while promoting gender equality, education, and environmental sustainability. They are also basic human rights—rights of each person on the planet to health, education, shelter, and security."[38]

Clearly, these goals were affected by a central theme embedded in the HDI: development and poverty are multidimensional and must be addressed from a variety of angles.[39] Like the HDI, the MDGs mapped out quantifiable dimensions that could be translated into policy goals and tracked for progress. The MDGs also included education as an important facet of human development. As previously mentioned, the second goal of the MDGs was to achieve universal primary education, and the indicators used to measure this goal were the net enrollment ratio in primary education, the proportion of pupils starting grade 1 who reach grade 5, and the literacy rate of 15-24 year-olds.

As is the case with any large, international initiative, a multitude of critiques exist regarding the Millennium Development Goals. While it is true that the world made noteworthy progress toward achieving the MDGs by 2015, the progress was limited and uneven across countries overall. For the purposes of this review, however, the scholarly debate regarding the extent to which the MDGs were met will not be the main point of discussion. This section of the review will focus on the criticisms that have been offered regarding the goals established by the MDGs, especially those regarding education.

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[38] Millennium Project. "UN Millennium Project | About the MDGs." *UN Millennium Project | About the MDGs*. 2006. Web. 20 Nov. 2016.< http://www.unmillenniumproject.org/goals/>.

[39] Paquale De Muro, Matteo Mazziotta, and Adriano Pareto. "Composite Indices of Development and Poverty: An Application to MDGs" *Social Indicators Research* (2011) 104: 2.
Sabina Alkire. *Human Development Research Paper 2010/01 Human Development: Definitions, Critiques, and Related Concepts*. Rep. United Nations Development Programme, (2010):32.

Scholars have criticized almost every aspect of the goals: their formation, structure, content, implementation, and even the failure of countries to realize the goals.[40] Some scholars contest the notion that the MDGs were multifaceted in their approach to human development by claiming that MDGs took a money-centered approach. They assert that the goals were "cut back to a standard set of macroeconomic, sectoral or institutional reforms of a technical nature," meaning that proponents of the MDGs have been pushing various reforms, made possible by a donor-centered culture, in order to meet the targets.[41] According to Jan Vandemoortele, a former UN staff member and co-architect of the MDGs, supporters of MDGs fall into three categories: those who argue that slow economic growth was the primary reason countries failed to achieve the 2015 targets, those who say it was insufficient foreign aid, and those who believe inadequate governance was the cause. These camps all attribute failure to meet the targets to different fundamental challenges, but they also assume that the problem can be fixed through reform, aid, and donations. Vandermooretele, meanwhile, stresses that the MDG agenda was meant to incite fundamental changes in society, driven by domestic politics and local actors rather than international organizations. Experts like David Hulme and Samir Amin would agree with Vandermooretele; they have criticized the MDGs for being "largely a rich world product for rich world audiences," driven by the "triad 'United States, Europe, and Japan', and co-sponsored by the World Bank, International Monetary Fund, and the Organization for Economic Co-operation and Development."[42] They argue that, as a result, the goals push "one-size fits all" policies and

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[40] Maya Fehling Brett D. Nelson, and Sridhar Venkatapuram. "Limitations of the Millennium Development Goals: A Literature Review." *Global Public Health,* (2013); 8(10): 1109-122. *NCBI*. Taylor & Francis. Web. <doi: 10.1080/17441692.2013.845676>.

[41] Jan Vandemoortele,"The MDG Story: Intention Denied." *Development and Change*, (2011); 42: 1. Wiley Online Library. Web. 27 Nov. 2016 <DOI: 10.1111/j.1467-7660.2010.01678.x>.

[42] David Hulme. "The Millennium Development Goals (MDGs): A Short History of the World's Biggest Promise" *University of Manchester - Institute for Development Policy and Management (IDPM) BWPI Working Paper No. 100*. (2009): 1.

reforms that fail to address the realities within the world's poorest nations. In addition, some critics firmly believe that developing nations were not just overruled by developed nations, but indeed underrepresented and absent from the discussion regarding the MDGs from the start.[43] Other scholars critique the MDGs for leaving out certain goals for political reasons,[44] or omitting important goals from the list without justification.[45]

There are also various critiques regarding the MDG's goal for education specifically. The scope of MDG 2 has come into question; some scholars believe that the focus on primary education is too limited, and fails to properly acknowledge the importance of secondary and postsecondary education.[46] One of the primary critiques is that MDG 2's push for universal primary education focused the world's attention on access to education at the expense of quality education. While universal primary education was not achieved by 2015, completion rates for primary and lower secondary education have been rising steadily since 2000; completion rates for primary education in both developed and developing regions exceeded 90% in 2013.[47] In

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Samir Amin. "The millennium development goals – A critique from the South." *Monthly Review-an Independent Socialist Magazine.* (2006); 57(10).

[43] Fabienne Richard et al. "Sub-Saharan Africa and the health MDGs: The need to move beyond the 'quick impact' model." *Reproductive Health Matters*. (2011); 19(38): 43.

Naila Kabeer. "The Beijing platform for action and the millennium development goals: Different processes, different outcomes." *Baku: United Nations Division for the Advancement of Women*; (2005): 4. Web. 26 Nov. 2016. <http://www.un.org/womenwatch/daw/egm/bpfamd2005/experts-papers/EGM-BPFA-MD-MDG-2005-EP.11.pdf>.

Jeff Waage et al. "The millennium development goals: A cross-sectoral analysis and principles for goal setting after 2015." The *Lancet*. (2010); (376): 991.

[44] Rosalind Eyben. "The road not taken: International aid's choice of Copenhagen over Beijing." *Third World Quarterly.* (2006); 27: 595–608.

[45] Michiel Keyzer and Lia Van Wesenbeeck. "The millennium development goals, how realistic are they?" *De Economist*-Netherlands. (2006);154: 443–466.

[46] Yehualashet Mekonen. "'2015' agenda for Africa: Development from a human perspective." *Ids Bulletin-Institute of Development Studies*. (2010); 41(1): 46.

Aina Tarabini. "Education and poverty in the global development agenda: Emergence, evolution and consolidation." *International Journal of Educational Development*. (2010); 30: 204–212.

[47] United Nations. "Sustainable Development Goal 4." *Sustainable Development Knowledge Platform*. United Nations Department of Economic and Social Affairs, Web. 20 Nov. 2016 <https://sustainabledevelopment.un.org/sdg4>.

sub-Saharan Africa, primary school enrollment increased from less than 60% to almost 80%, but such accomplishments came with unintended consequences. Experts claim that many countries have failed to support the growing number of students with a simultaneous growth in the number of qualified teachers and school resources.[48] Consequently, schools in many low-income countries have alarming student to teacher ratios—the global average is 25:1—which casts doubt on the quality of learning and education that these students are receiving. Evidence has shown that the concerns of these scholars are justified. In 1999, a World Bank survey in rural Bangladesh found that three years of schooling had almost no value in terms of learning achievement.[49] In 2014, a study that focused on 13 Arab countries estimated that 56% of primary students and 48% of lower secondary school students were not learning basic competencies according to international test scores.[50] Daniel Wagner—a professor of education at the University of Pennsylvania, and Director of the International Literacy Institute—stated in 2015 that in many low-income countries, children "cannot read a single word even after attending school for several years," which means that even basic literacy is not guaranteed by sending a child to primary school.[51] Overall these scholars claim that MDG 2 set a goal that the world was not actually prepared to realize, and children in low-income countries are receiving low-quality education because of it.

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[48] Angeline Barrett. "A millennium learning goal for education post-2015: A question of outcomes or processes." *Comparative Education*. (2011); 47(1): 120.
Jann Lay. "Millennium development goal achievements and policies in education and health: What has been learnt?" *Development Policy Review*. (2012); 30(1): 67–85.
Daniel Wagner. "Learning and Literacy A research agenda for post-2015." *International Review of Education* (2015): 61: 328.

[49] V. Greaney et al. "*Bangladesh: Assessing basic learning skills*." Washington, D.C.: World Bank. (1999).

[50] Rebecca Winthrop, Kate Anderson, and Ines Cruzalegui. "A review of policy debates around learning in the post-2015 education and development agenda." *International Journal of Educational Development* (2015): 40: 299.

[51] Daniel Wagner. "Learning and Literacy A research agenda for post-2015." *International Review of Education* (2015): 61: 329.

Conversely, many scholars—even those who harshly criticize the MDGs—acknowledge the merits of the MDGs and the progress they have helped the world make in reducing poverty. The MDGs are credited with inciting and promoting international support for global poverty reduction.[52] Furthermore, the broad support for the MDGs and the enthusiasm over their successes "appears to have entrenched global goal setting as a central policy instrument" that allowed countries to create a unified development agenda.[53] Although many scholars readily acknowledge that the agenda was not perfect, they also understand that the MDGs were the most comprehensive and measurable poverty reduction initiative the world had ever undertaken.[54]

Regarding MDG 2 specifically, while it might be true that pursuing universal primary education diverted focus and resources from ensuring children received a quality education, many scholars realize that it is a necessary first step in the human development agenda. Students must be enrolled in school and taking classes before the question of quality even comes into play. Furthermore, some scholars assert that the equity promoted by universal primary education is a necessary component of quality education. According to Robin Alexander—a professor and former president of the British Association of International and Comparative Education— these scholars have made a "consistent argument" for the "inseparability of quality from equity" because an education system can "hardly be described as being of good quality" without being equitable in areas such as access, enrolment, gender parity, retention and completion.[55] These

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[52] Jeff Waage et al. "The millennium development goals: A cross-sectoral analysis and principles for goal setting after 2015." The *Lancet*. (2010); (376): 991.
[53] Sakiko Fukuda-Parr et al. "*Synthesis Paper - The Power of Numbers: A Critical Review of MDG Targets for Human Development and Human Rights*." Working paper. Harvard School of Public Health (2013): 4. Web. 15 Oct. 2016. < https://cdn2.sph.harvard.edu/wp-content/uploads/sites/5/2013/09/Synthesis-paper-PoN_Final1.pdf>.
[54] Jan Vandemoortele,"The MDG Story: Intention Denied." *Development and Change*, (2011); 42: 3. Wiley Online Library. Web. 27 Nov. 2016 <DOI: 10.1111/j.1467-7660.2010.01678.x>.
[55] Robin Alexander "Teaching and learning for all? The quality imperative revisited." *International Journal of Educational Development.* (2015); 40: 250.

experts defend the central importance MDG 2 and support continued pursuit of universal primary education by citing statistics that reveal severe and persisting inequality in access to education. In 2014 the Education For All Global Monitoring Report found that while the world's richest boys are on track to achieve universal primary education by 2021, the poorest girl will not catch up until 2086.[56] Consequently, some scholars believe it is necessary that universal primary education continues to be a top priority, and quality should be the focus only after the most marginalized populations are in the classroom.

In addition, scholars have seen the value of MDG 2 simply because it gives education a prominent place in the global development agenda by establishing a publicized target for countries to work towards. Domestic and international pressure to achieve the MDGs pushed national governments (and private entities) to devote more time and resources to education. As a result, the MDGs led to substantive increases in international development assistance to education, but also increased attention to the importance of children's learning on a global scale.[57] Overall, defenses of MDG 2—like many defenses of human development theories and initiatives—do not claim universal primary education should be the sole and final goal of education in human development, but they do claim that it is an important stepping-stone to continued success and development in the future.

III. Education and the Sustainable Development Goals

At the time of their adoption, the MDGs were set to be achieved by 2015. Though universal primary education was not in fact achieved by 2015, officials, analysts, scholars, and other

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[56] UNESCO "*Teaching and Learning: Achieving Quality for All*." EFA Global Monitoring Report 2013/14 UNESCO, Paris (2014): 7. Web. 09 Dec. 2016. <http://www.uis.unesco.org/Library/Documents/gmr-2013-14-teaching-and-learning-education-for-all-2014-en.pdf>.

[57] Daniel Wagner. "Learning and Literacy A research agenda for post-2015." *International Review of Education* (2015): 61: 328.

experts came together in the years leading up to 2015 to discuss what the post-2015 United Nations agenda for human development should look like. The Sustainable Development Goals were born out of this discussion and debate. Adopted in 2015, the SDGs consisted of 17 goals for countries to meet by 2030.[58] The overarching theme of the MDGs was poverty reduction, which was mainly characterized as a problem of human development that could be solved using economic solutions.[59] The SDGs however, take impending climate change into account, and conceptualize development as an environmental, social, *and* economic initiative. Consequently, the seventeen SDGs are more complex and comprehensive than the eight MDGs were. According to the UN's website for the Sustainable Development Agenda, the SDGs:

"build on the success of the Millennium Development Goals and (MDGs) and aim to go further to end all forms of poverty. The new goals are unique in that they call for action by all countries, poor, rich and middle-income to promote prosperity while protecting the planet. They recognize that ending poverty must go hand-in-hand with strategies that build economic growth and addresses a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection."[60]

In many ways, the debate about the post-2015 development agenda, the Sustainable Development goals, and the role education should play highlighted the preexisting concerns about the goals and targets created by the MDGs. Quality, in addition to access to education, was a central concern in the debate. Some scholars posited that access to primary education previously received excessive attention because targets for school attendance are easily

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[58] Go to http://www.un.org/sustainabledevelopment/sustainable-development-goals/ for a list of all 17 goals

[59] Angeline Barrett et al. "Learning, pedagogy, and the post-2015 education and development agenda." *International Journal of Educational Development* (2015); 40: 232.

[60] United Nations Department of Public Information. "The Sustainable Development Agenda." *United Nations Sustainable Development Goals*. United Nations, Web. 30 Nov. 2016. <http://www.un.org/sustainabledevelopment/development-agenda/>.

computed, whereas "quality" is more difficult to measure and quantify. According to Robin Alexander—a Fellow of Wolfson College at the University of Cambridge—striking statistics such as "57 million children still out of primary school, half of them in 32 countries suffering conflict" show that "numbers offer headlines and dramatic immediacy. 'Quality' does not."[61] Thus the media, the public, and politicians all placed emphasis on getting children into the classroom, without paying proper attention to what happened when they got there. According to some experts, this limited focus was the natural result of a narrowly conceptualized goal—MDG 2.[62] Some scholars go so far to claim that MDG 2 was purposefully narrow, making it a "low-hanging fruit" with indicators chosen to show a "quick impact" and create a perception of meaningful progress in human development.[63]

Sustainable Development Goal 4 addressed these criticisms. The following is SDG 4 as described on the UN's Sustainable Development Goals website, followed by a list of official targets and indicators used to measure progress toward achieving SDG 4:

SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Table 2: SDG 4 Targets and Indicators

Targets (from the 2030 Agenda)	Indicators

[61] Robin Alexander "Teaching and learning for all? The quality imperative revisited." *International Journal of Educational Development.* (2015); 40: 250.
[62] Jeff Waage et al. "The millennium development goals: A cross-sectoral analysis and principles for goal setting after 2015." The *Lancet*. (2010); (376): 997.
[63] Fabienne Richard et al. "Sub-Saharan Africa and the health MDGs: The need to move beyond the 'quick impact' model." *Reproductive Health Matters*. (2011); 19(38): 52.

4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes	4.1.1 Proportion of children and young people: (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex
4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education	4.2.1 Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial well-being, by sex 4.2.2 Participation rate in organized learning (one year before the official primary entry age), by sex
4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university	4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex
4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	4.4.1 Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill
4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations	4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated
4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy	4.6.1 Percentage of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex
4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	4.7.1 Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in: (a) national education policies, (b) curricula, (c) teacher education and (d) student assessment
4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all	4.a.1 Proportion of schools with access to: (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions)
4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries	4.b.1 Volume of official development assistance flows for scholarships by sector and type of study
4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States	4.c.1 Proportion of teachers in: (a) pre-primary; (b) primary; (c) lower secondary; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country

Targets taken from UN Sustainable Development Goals Website[64]

Based on the wording of SDG 4, its targets, and indicators, it is apparent that the emphasis has shifted to ensuring quality education for children. Three of the targets directly mention "quality," and two additional targets articulate a need to improve school facilities, teachers, and resources, which will also impact education quality. In addition, there is a new emphasis on equity, instead of simple access; target 4.1 mentions equitable education for all, and target 4.5 specifically aims to include marginalized populations by eliminating gender disparities and including persons with disabilities as well as indigenous peoples. While access for all is still a focus—mentioned in four of the targets—SDG 4 signals a more comprehensive and complex understanding of the role of education in human development. With over 25 possible metrics to consider when assessing progress toward achieving SDG 4, the goal for education is no longer narrow in scope, and arguably no longer based on a 'quick impact' model. The changes necessary to achieve SDG 4 will take time and effort, but the goal does demonstrate that the human development agenda has shifted to emphasize equity and quality in addition to access.

IV. Debating the Post-2015 Education and Development Agenda

The HDI, MDGs and SDGs are by no means the only international human development initiatives in education. The United Nations Educational, Scientific, and Cultural Organization (UNESCO), Education for All (EFA), the World Education Forums, and countless NGOs are also dedicated to educational development. In fact, Education For All—a global movement led by UNESCO that aims to ensure quality basic education for all children, youth, and adults—has been a leader in establishing international goals for education and a crucial resource for the

[64] Inter-Agency and Expert Group on SDG Indicators. *Final List of Proposed Sustainable Development Goal Indicators* (2013). Web. 20 Nov 2016. <https://sustainabledevelopment.un.org/content/documents/11803Official-List-of-Proposed-SDG-Indicators.pdf>.

committees that were tasked with setting the Sustainable Development Goals. Like the MDG initiative, EFA set internationally agreed goals to be achieved by 2015—listed in table 3.

Table 3: EFA Goals for 2015

Goal 1
Expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children.
Goal 2
Ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to, and complete, free and compulsory primary education of good quality.
Goal 3
Ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life-skills programmes.
Goal 4
Achieving a 50 per cent improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults.
Goal 5
Eliminating gender disparities in primary and secondary education by 2005, and achieving gender equality in education by 2015, with a focus on ensuring girls' full and equal access to and achievement in basic education of good quality.
Goal 6
Improving all aspects of the quality of education and ensuring excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills.
Goals taken from UNESCO website[65]

With the EFA goals and MDGs both set for 2015, scholars came together in the years leading up to their conclusion to assess the state of education, and provide suggestions regarding the goals of education and development post-2015. Though the targets and indicators of SDG 4 certainly signify an attempt to address the criticisms of MDG 2, not all of the scholarly advice was incorporated, and the concerns of those experts remain valid. Scholars such as Daniel Wagner and Leon Tikly asked important questions about the types of research that would be necessary to realize the new goals for quality learning in low-income countries.[66] Wagner

[65] UNESCO. "Education for All Goals" Web. Accessed 10 Feb. 2017 <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-all/efa-goals/>.
[66] Daniel Wagner. "Learning and Literacy A research agenda for post-2015." *International Review of Education* (2015): 61: 327-341.

proposed certain areas of research to be prioritized including: enhancing readiness for schooling, ramifications of language of instruction, instructional practices for reading and mathematics, accountability at the community level, international goals which support local needs. According to Wagner continued research into such areas would be crucial for discovering the factors that influence learning and literacy outcomes so that new targets can actually be met.

Furthermore, Leon Tikly stressed the need for research that not only seeks to discover "what works," but takes a more nuanced approach that asks "what works, for whom, and under what circumstances."[67] The basic "what works" mentality has led stakeholders in education to invest millions of dollars in research programs that only give empirical results. Tikly cites the proliferation of standardized tests as the result of policymakers' reliance on oversimplified measures of learning. Scholars like Tikly and Wagner assert that changing the focus of the education development agenda to include "quality" is not enough; researchers and other stakeholders need to actively work toward a qualitative, inclusive, and clear definition of "quality" so that meaningful educational goals can be achieved.

Other scholars were concerned that metrics used to measure progress towards achieving the targets failed to properly conceptualize and incentivize the pursuit of *quality* education.[68] Though "quality" was a popular buzzword used in the post-2015 debate, these scholars argue that commonly referenced indicators are too focused on aspects of education that are

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Leon Tikly. "What works, for whom, and in what circumstances? Towards a critical realist understanding of learning in international and comparative education." *International Journal of Educational Development*. (2015): 40: 237.

[67] Leon Tikly. "What works, for whom, and in what circumstances? Towards a critical realist understanding of learning in international and comparative education." *International Journal of Educational Development*. (2015): 40: 237.

[68] Robin J. Alexander "Teaching and learning for all? The quality imperative revisited." *International Journal of Educational Development.* (2015); 40: 250.
Michelle Schweisfurth. "Learner-centered pedagogy: Towards a post-2015 agenda for teaching and learning" *International Journal of Educational Development*. (2015): 40: 259.

"measurable," rather than emphasizing the processes that encourage quality learning in the classroom. EFA reports commonly used factors such as pupil-to-teacher ratio, the amount of training teachers had received, and net enrolment ratio to indicate quality. To Alexander, this methodology promotes a limited conception of quality education, and fails to give due attention to gauging successful teaching methods and practices and factors that affect learning outside of the classroom.

Similarly, Michelle Schweisfurth has also argued that pedagogy—"the study of teaching methods, including the aims of education and the ways in which such goals may be achieved…[and] the theories about the way in which learning takes place"[69]—deserves to be a higher priority in the new agenda. Schweisfurth claims that an obsession with measureable inputs and outcomes prevents deeper lasting gains from being made in education.[70] Oversimplified indicators and agendas often ascribe rigid roles for teachers and students and promulgate the notion that learning goals, testing, and measurement are an "omniscient guiding and monitoring" force in the effort to assess learning.[71] While measurement is not inherently problematic, Schweisfurth claims that it often distorts the goals of education and leads to unintended effects—one being that aspects of education which are not readily measureable often become secondary considerations in the agenda. Overall, many scholars—Schweisfurth and Alexander included—argue for researchers, policymakers, and other stakeholders to adopt a more nuanced and comprehensively defined, qualitative approach to setting and pursuing the post-2015 education development goals.

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[69] Edwin A Peel. "Pedagogy" *Encyclopedia Britannica*. (2009) Web. Accessed 20 Feb. 2017. < https://www.britannica.com/science/pedagogy>.
[70] Michelle Schweisfurth. "Learner-centered pedagogy: Towards a post-2015 agenda for teaching and learning" *International Journal of Educational Development*. (2015): 40: 260.
[71] Michelle Schweisfurth. "Learner-centered pedagogy: Towards a post-2015 agenda for teaching and learning" *International Journal of Educational Development*. (2015): 40: 260.

Another camp of scholars defends the need for goals to be succinct, clear, and measureable.[72] To these scholars, ideologically complex qualitative goals do not gain as much political traction, and tend to fall to the wayside as stakeholders invest in efforts where they expect to see measurable returns. Pauline Rose—a former director of the EFA Global Monitoring Report—wrote an article detailing lessons learned from 15 years of EFA based on the responsiveness and progress towards each of the six EFA goals since the initiative's inception. Rose claimed that "successful goals and targets are easily communicated" so that their purpose and aims resonate with the public, which encourages governments to implement initiatives to achieve them.[73] Furthermore, each target should be measurable, so that relevant solutions can be pursued and countries can be held accountable. While Rose recognizes that measurable indicators often bring about unintended consequences, she stresses that "avoiding measurement of learning is not desirable" because there would be no way to know whether "an education system is enabling all children to learn basic skills."[74] Though the measurable indicators should not be ends themselves, Rose claims that they provide an important means of assessing the most basic aspects of education.

Winthrop and Anderson hold similar views, suggesting that a learning development goal needs to be tracked globally, and with clear measures for its success. To these scholars the "imperatives of necessity, and accountability are yoked together in an argument for" establishing

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[72] Rebecca Winthrop, Kate Anderson, and Ines Cruzalegui. "A review of policy debates around learning in the post-2015 education and development agenda." *International Journal of Educational Development* (2015): 40: 299.
Pauline Rose. "Three lessons for educational equality in post-2015 goals and targets" clarity, measurability, and equity." *International Journal of Education and Development* (2015): 40: 289.
[73] Pauline Rose. "Three lessons for educational equality in post-2015 goals and targets" clarity, measurability, and equity." *International Journal of Education and Development* (2015): 40: 290.
[74] Pauline Rose. "Three lessons for educational equality in post-2015 goals and targets" clarity, measurability, and equity." *International Journal of Education and Development* (2015): 40: 292.

clear measures of learning.[75] While these scholars acknowledge that such measures and indicators will undoubtedly be imperfect, they also assert that the best way to ensure policymakers make an active effort to reach the goals is by utilizing measurable indicators.

While the heated debate on the post-2015 agenda certainly affected the formation of SDG 4, the critiques and concerns brought about by scholars remain relevant and important to the pursuit of the new education development agenda. The scholarly fracture between the desire for comprehensive qualitative goals and the pragmatic need for clear, measurable quantitative goals that will actually be pursued will persist for years as stakeholders try to appropriately conceptualize targets without oversimplifying or overcomplicating their aims. SDG 4 asks the world to pursue access, equity, and quality in education by keeping track of numerous indicators based on proportions and percentages. However, some of the values that countries are asked to track—such as extent to which global citizenship education is mainstreamed in curricula, proportion of children under 5 years of age who are developmentally on track in health and learning—lack the clarity that some scholars find crucial, but such indicators do place value on processes inside and outside the classroom that lead to successful students. While SDG 4 does not set a target that is as captivating and measurable as "universal primary education," it strikes an interesting balance between the measurable and the conceptual.

Conclusion

The Human Development Index (HDI), the Millennium Development Goals (MDGs), and the Sustainable Development Goals (SDGs) are by no means the only international human development initiatives in education, but they are some of the most well-known and influential human development initiatives—many forums and international efforts are directed and

[75] Rebecca Winthrop, Kate Anderson, and Ines Cruzalegui. "A review of policy debates around learning in the post-2015 education and development agenda." *International Journal of Educational Development* (2015): 40: 299

influenced by them. The prominence of the SDGs in determining the agenda for human development for the next 15 years (though they are not necessarily the entire agenda) justifies their use as a lens to understand the current state of the goals for human development, and the role that education plays within them. Though some scholars and policymakers expressed fatigue with global frameworks, Kevin Watkins—former executive director of the Overseas Development Institute in London—offered a powerful response:

"At a time when international cooperation is at a low ebb, when poverty is slipping down the global agenda, and levels of inequality across and within countries are drifting beyond the bounds of acceptability, failure to develop an ambitious post-2015 framework to replace the MDGs would create a dangerous vacuum"[76] SDG 4 certainly fulfilled Watkins' request. It is ambitious; it will be difficult to reach, and just as hard to measure.

Education has been an integral part of human development since the concept was formally introduced in the first Human Development Report in 1990. Over time, the concept of human development has become increasingly multifaceted and nuanced, and the current human development agenda is more comprehensive than ever. While experts seem to agree on the importance of education within human development, discrepancies persist regarding how educational goals should be set and measured.

On September 25th 2015, the Sustainable Development Goals were officially adopted and SDG 4 indicated an important shift in the perception of education. Equity and quality of education are now central concerns of the human development agenda. While these considerations represent the increasingly comprehensive nature of human development, they will also create significant challenges for pursuing and measuring progress in the future. Thus SDG 4 highlights the tension between addressing the quantitative and qualitative aspects of human

[76] Kevin Watkins. "Leaving no one behind: an agenda for equity." *The Lancet* (2014): 384: 2249.

development when setting the global agenda. Consequently, scholars, policymakers, and various other stakeholders are scrambling to find objective, reliable, and viable ways to pursue this new ambitious agenda.

Background: The Testing Phenomenon

Reasons for the Rise of Testing

Before the role of PISA within the broader human development agenda can be properly evaluated, it is necessary to understand the prominence of PISA and other international assessments. As the role of education within human development has evolved, various stakeholders in education have increasingly turned to international and national tests to assess and measure educational outcomes. Prior to the 1980s, few nations used national or international tests. However, from 1990 to 2005, the number of countries that participated in learning assessments more than doubled, from 28 to 67.[77] Developed countries tend to have the highest usage rates, but developing countries have also significantly increased usage of learning assessments—from 28% to 51% in that same 1990 to 2005 period—and "in transition" countries increased participation by 43%. By 2015, 105 countries administered one or more national-level assessments and over one-third of the world's countries participated in PISA.[78] This dramatic growth of national and international testing in recent decades necessitates a deeper look at the forces that have coalesced to make standardized assessment a central element of education.

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[77] David H. Kamens and Connie L. McNeely. "Globalization and the Growth of International Educational Testing and National Assessment." *The University of Chicago Press on behalf of the Comparative International Education Society.* (2010); 54(1): 7.

[78] EPDC. *EPDC Policy Brief: Mapping national assessments*. Durham: FHI360. (2015): 3. Web. Accessed 05 Mar 2017. < http://www.epdc.org/sites/default/files/documents/EPDC_NLAMP_report-v3.pdf>.
Marlaine E. Lockheed. "Why Do Countries Participate in International Large-Scale Assessments? The Case of PISA" World Bank Group Policy Research Working Paper 7447 (2015): 2.

The proliferation of assessments and testing can be attributed to several interrelated themes: 1) globalization, 2) the pervasiveness of neoliberal ideology, 3) the supremacy of science and rationality, 4) improved technology, and 5) the framing of education as a central tenet of a nation's economic competitive advantage. The rest of this section aims to explain each of these phenomena and how their coalescence brought about the rise in testing, while the next section applies these trends by detailing the history of international and national tests.

The contemporary era of globalization—generally regarded as the 1970's onward—established the foundation for the rise in testing. During this era multiple powerful intergovernmental organizations (IGOs) and international nongovernmental organizations (INGOs) were created, which challenged traditional notions of national sovereignty.[79] In addition, economic ties and dependencies deepened due to the emergence of global production chains and an increase in international trade deals. Scholars have shown that as countries become embedded in this global network, they are more likely to adopt common world models and standards.[80] At the same time, many scholars and stakeholders have noted that "rich, core, Western states" have historically set the agenda politically and economically, and have maintained a disproportionately strong influence in the network of global organizations.[81] For instance, the rise and dominance of the neoliberal model of economic development[82] is often attributed to the policies pushed by the World Bank, IMF, and the US Treasury Department.[83] In

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[79] Peter M. Haas and John A. Hird, ed., *Controversies in Globalization: Contending Approaches to International Relations* (Los Angeles: Sage Publications, 2013), liii.
[80] Melanie M. Hughes et al. "Power and Relation in the World Polity: The INGO Network Country Score, 1978-1998" *Social Forces*. (2009); 87(4): 1712.
[81] Jason Beckfield "Inequality in the World Polity: The Structure of International Organization" *American Sociological Review*. (2003); 68(3): 401.
[82] See pages 10-11 for a description of neoliberalism
[83] Referss to the Washington Consensus
Sandra Halperin "Development Theory" *Encyclopedia Britannica*. Last Updated: Apr. 2013. Web. 04 Mar. 2017. <https://www.britannica.com/topic/development-theory>.

a similar fashion, as countries became increasingly interconnected through globalization processes, a global standard for testing emerged.

Numerous experts also view the increase in testing and assessment standards as a result of the neoliberal model of development that dominated the 1980s. As mentioned earlier, this model emphasized deregulation and lack of government interference in favor of letting capitalist principles and market forces direct the economy. These scholars claim that neoliberalism rationalized modeling all aspects of human and societal activity—not just national economies—after the capitalist market. Thus the neoliberal ideology demanded competition, efficiency, and commodification of the education system. Various stakeholders responded by creating a "regime of accountability" based on standardized assessment procedures.[84] These tests produced scores and rankings that allowed consumers (students, parents, and policymakers) to evaluate and compare schools and even national education systems. This accountability system facilitated a market-based mindset within education, which fostered competition amongst students, teachers, and schools to outperform each other on tests to earn higher rankings.[85] Furthermore, some of these experts claim that the structure and ideology of capitalism cyclically reinforced its "inevitability, and its rendering unthinkable any alternatives."[86] They suggest the neoliberal perspective has become so ingrained in modern society that stakeholders are incapable of imagining viable alternatives to assessing and organizing educational systems.

While neoliberalism provides an interesting theoretical context for the increase in national and international assessments, it is important to note that the legitimacy and desirability of

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[84] Noah De Lissovoy. "Pedagogy of the Impossible: neoliberalism and the ideology of accountability" *Policy Futures in Education.* (2013); 11(4): 423.
[85] Noah De Lissovoy. "Pedagogy of the Impossible: neoliberalism and the ideology of accountability" *Policy Futures in Education.* (2013); 11(4): 423.
[86] Noah De Lissovoy. "Pedagogy of the Impossible: neoliberalism and the ideology of accountability" *Policy Futures in Education.* (2013); 11(4): 425.

testing also stems from bureaucratic trends in rationalization and scientific measurement. According to a theory most famously proposed by Max Weber, bureaucracies are organized according to rational principles, and their administration demands calculable, measurable results.[87] Thus bureaucrats and politicians seek to identify rational and objective laws and standards to inform their decisions and guide their policies. Other scholars refer to this phenomenon as the "hegemony of science," which causes politicians and an array of other stakeholders to believe that technical quantitative measurements are not only preferable, but also identifiable in most cases.[88] This assumption has led to the creation of quantitative measures in areas where none previously existed, and gives political initiatives with measurable standards an authority that ideological and conceptual initiatives very rarely obtain. Thus educational assessments are appealing because they offer "an easily-accessible account of cause-effect relations," which gives policymakers a convenient reference point for making informed, "evidence-based" policy decisions.[89] This mindset legitimized national and international tests because they provided an ostensibly reliable account of a country's performance in education in the form of a simple, "easy-to-use" metric.

There are additional—arguably complementary—factors that also spurred the global testing phenomenon. Modern technology and advanced data analysis techniques have facilitated global exchanges of information and made the testing process easier. Formal international testing is largely a post-World War II effort encouraged by the availability of sophisticated testing

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[87] Max Weber. *From Max Weber: Essays in Sociology*, trans. H. H. Gerth and C. Wright Mills. *Oxford University Press* (New York: NY, 1946). Print. 196-240.
[88] David H. Kamens and Connie L. McNeely. "Globalization and the Growth of International Educational Testing and National Assessment." *The University of Chicago Press on behalf of the Comparative International Education Society.* (2010); 54(1): 11.
[89] Kerstin Martens, Dennis Niemann, Janna Teltemann. "Effects of international assessments in education—a multidisciplinary review" *European Education Research Journal*. (2016); 15(5): 517.

methods and computing capabilities that make large-scale data collection feasible.[90] As mentioned in the literature review earlier, scholars still debate whether or not these tests and their methodologies are truly comprehensive enough to properly inform policy decisions, but that has not stopped the media and government officials from drawing implications for policy based on test results. The media attention given to international assessments—like PISA—that publish rankings of national education systems has increased over the past decade, which further encourages the use of such measures at a reference point.

Lastly—and partially due to the media sensationalism that fosters comparisons between national education systems—education is now framed as a central source of a nation's economic competitive advantage. Given the rate of globalization during the past several decades, many countries have come to the conclusion that natural resources alone cannot ensure economic prosperity; today "the most powerful competitive advantage is brain power: a workforce that invents and innovates."[91] This realization has intensified the contest to both produce and attract the world's brightest workers. Naturally education policy has been deemed the most direct link to generating a successful, high quality labor force. As a result, education is framed as a way to improve a nation's human capital—the skills and knowledge of citizens—so that its workers and economy will be more prosperous in the future. National governments are placing ever-greater emphasis on their primary and secondary education systems. Policymakers are looking for ways to gauge and assess the relative success—or value—of their nation's human capital, and they often do so by participating national or international assessments.

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[90] David H. Kamens and Connie L. McNeely. "Globalization and the Growth of International Educational Testing and National Assessment." *The University of Chicago Press on behalf of the Comparative International Education Society.* (2010); 54(1): 8.

[91] David H. Kamens and Connie L. McNeely. "Globalization and the Growth of International Educational Testing and National Assessment." *The University of Chicago Press on behalf of the Comparative International Education Society.* (2010); 54(1): 10.

National and International Assessments

In order to understand the application of the aforementioned factors that led to the rise in testing, this section takes a look at specific testing initiatives and details the recent history of national and international tests. Currently, nearly all countries conduct some form of national assessment in order to evaluate whether students are meeting the state's educational goals. National assessments are beneficial because they reflect national curriculum objectives and priorities, which provides useful, localized information for policymakers.[92] National tests can also have implications for teacher training, resource allocation, and the structure of the educational system.

At the same time, many scholars are critical of national standardized assessment, citing specific national testing initiatives as evidence of the neoliberal ideology in education.[93] Both the United States and Britain adopted policies that transformed their education systems by introducing formal standards and standardized testing requirements. In the United States, the passage of the No Child Left Behind Act (2001) created intense competition between schools, by mandating that students would be allowed to transfer from schools with low test scores. Scholars have argued that the United States utilized the neoliberal belief in the free market to justify allowing student "consumers" the right to choose their school "product," and creating incentives and penalties based off test scores. To scholars that believe neoliberalism caused the proliferation of standardized tests, citizens of any given nation do not believe that is it reasonable to quantify "learning" through a multitude of simplified, testable objectives, but the current structure of the education system in these countries prevents them from seeing another viable option. Thus the

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[92] Daniel A. Wagner. "Smaller, Quicker, Cheaper: Improving Learning Assessments for Developing Countries" *UNESCO: International Institute of Educational Planning* (2011): 39-40.
[93] David Hursh. "The growth of high-stakes testing in the USA: accountability, markets, and the decline in educational equality" *British Educational Research Journal*. (2005); 31(5): 605-606.

neoliberal ideas that created a demand for accountability and systematic evaluation of national education systems have had immense staying power.

The growth in international and regional assessments has paralleled the growth in national testing. In the 1960s, national education systems were considered to be unique in structure, purpose, and historical context, which rendered them incomparable. Prior to the 1980s, the International Association for the Evaluation of Educational Achievement (IEA) was one of the only entities pursuing standardized international assessment initiatives.[94] In its early years, the IEA conducted a small number of large-scale cross-national assessments, making it the first entity to measure individual learning achievement for international comparative purposes.

That notion that education systems exist in unique and isolated contexts has since given way to the assumption that different types of education systems can be compared and ranked to identify best practices. This change in perspective reflects the influences of globalization and the "hegemony of science" in the current world order. As nations became increasingly interconnected via trade ties and international organizations, the idea that national education systems could be compared became more conceivable. Furthermore, growing competition for international economic and political influence led policymakers to desire comparisons between national education systems to gauge their advantage over other nations. Legislators' assumption that these comparisons could be made numerically via tests is indicative of the tendency to use science and facts in policymaking. According to scholars like David Kamens and Connie McNeely, this "hegemony of science…contributes to the sense of a rationalized global world in which everyone is subject to the same kinds of causal laws and understandings" that can be

[94] From the IEA's official website: "The IEA is an international cooperative of national research institutions, government research agencies, scholars, and analysts working to evaluate, understand, and improve education worldwide. We are a nonprofit and independent organization. More that 60 countries are actively involved in the IEA network, and over 100 education systems participate in our studies" Web. Accessed 20 Feb. 2017<http://www.iea.nl/about-us>.

scientifically measured and analyzed.[95] In addition, this ideological shift seems to complement the kind of competition and accountability to customers derived from the neoliberal model. Thus the comparative and competitive principles that organize health care or business are also applicable to education systems, regardless of their varying national structures and historical contexts.

Once the fundamental shift regarding the comparability of national education systems took place (1970s-1990s), the number of international and regional assessments—and the number of countries that participated in them—multiplied. Currently, the IEA administers the Progress in International Reading Literacy Study (PIRLS), and the Trends in International Mathematics and Science Study (TIMMS). These initiatives are the most prominent large-scale international assessments of reading and math and science in *primary* education. PIRLS has been conducted every five years since 2001, and participation rates exemplify the general turn toward testing: 36 education systems participated in 2001, and 54 participated in 2016.[96]

While the IEA is certainly a prominent player in the realm of international assessment, other assessments (both regional and international) have emerged. According to Daniel A. Wagner, the UNESCO Chair in Learning and Literacy, three major regional assessments have emerged "as part of an effort to extend the use of large-scale educational assessments into developing countries.[97] These three main regional assessments are the Latin American Laboratory for Assessment of Quality in Education (LLECE), the Southern and Eastern African Consortium for the Monitoring of Education Quality (SACMEQ), and the Program for the Analysis of Education

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[95] David H. Kamens and Connie L. McNeely. "Globalization and the Growth of International Educational Testing and National Assessment." *The University of Chicago Press on behalf of the Comparative International Education Society.* (2010); 54(1): 11.
[96] IES: National Center for Education Statistics Website. Web. Accessed 5 Mar. 2017 <https://nces.ed.gov/surveys/pirls/>.
[97] Daniel A. Wagner. "Smaller, Quicker, Cheaper: Improving Learning Assessments for Developing Countries" *UNESCO: International Institute of Educational Planning* (2011): 39-40.

Systems of the CONFEMEN (Francophone Africa) Countries (PASEC). These regional assessments are given substantial credibility because they are the result of a collaborative effort between specialists at both the regional and international levels. All three initiatives were started between 1991 and 1995, and all assess the performance of elementary-age children. Other international tests that are not regionally focused include Early Grade Reading Assessments (EGRAs), and—of course—the Program for International Student Assessment (PISA). Thus the influences of neoliberal thought, and the ideological shift to accept the comparability of national education systems led to an increase in both the number of international assessments and number of countries that participate in such initiatives.

Some scholars claim that the testing phenomenon was perpetuated by a global world order that reinforced western education models. To these experts, neoliberalism and scientific policymaking might have laid the ideological framework for standardized tests, but a global network of NGOs, IGOs, and national actors cemented the status of testing and assessment. David Kamens and Connie McNeely have identified "an international consensus that has emerged—at least among developed countries—about the legitimacy and, even more so, the necessity of international testing and assessment."[98] Consequently, an increasing number of donor agencies and multilateral organizations now require some form of learning assessment as a condition on their loans and aid.[99] And when countries perform poorly on international tests, they often turn to IGOs and NGOs to help them create and administer national assessments. Through

[98] David H. Kamens and Connie L. McNeely. "Globalization and the Growth of International Educational Testing and National Assessment." *The University of Chicago Press on behalf of the Comparative International Education Society.* (2010); 54(1): 5.
[99] David H. Kamens and Connie L. McNeely. "Globalization and the Growth of International Educational Testing and National Assessment." *The University of Chicago Press on behalf of the Comparative International Education Society.* (2010); 54(1): 6.

globalization, nation states have become more integrated into this system, and more receptive to the global consensus that has emerged on the need to test student populations.

Jaakko Kauko, an associate professor in politics of education at the University of Helsinki, cites Brazil as a concrete example of the global consensus on testing. According to Kauko, the development of national assessments in Brazil was strongly influenced by international standards set by international organizations and other states.[100] The US and the World Bank, and the OECD were particularly influential in shaping Brazilian quality evaluation policies in the field of education. Kauko argues that these kinds of changes can be viewed as "sociological institutionalism" which spreads a specific world culture based on "converging international discourse on educational governance and standardized testing."[101] As a result, countries like Brazil increasingly view testing as an obligation in order to be seen as a competitive international player.

Overall, the scholarly interpretation of the national and international proliferation of standardized testing rests on a few key themes; namely globalization—which created a network of organizations that induced a global consensus on testing based on western models—neoliberalism, bureaucratic and scientific rationalization, technological capability, and the notion that education is central to economic competitive advantage. From a theoretical standpoint, the increase in assessments and tests is often attributed to a neoliberal emphasis on competition created through the free market and systematic evaluation. These ideological inputs were complemented by bureaucratic validation of testing as a measurement of education. Additionally, the broader context of intense globalization increased feelings of competition to establish

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[100] Jakko Kauko et al. "The emergence of quality assessment in Brazilian basic education" *European Educational Research Journal*. (2016); 15(5) 558-559.
[101] Kerstin Martens, Dennis Niemann, Janna Teltemann. "Effects of international assessments in education—a multidisciplinary review" *European Education Research Journal*. (2016); 15(5): 519.

economic advantage by producing quality human capital, and also fostered an international consensus on the comparability of national education systems. Various influential actors in the world order came to view testing as a necessity, which reinforced the status of standardized assessment and turned it into a widely accepted phenomenon—felt by many less influential actors as an obligation to conduct and participate in national and international assessments. The subsequent rise in testing has left us with a complicated web of national, regional, and international assessments.

The Creation of the Program for International Student Assessment (PISA)

The Program for International Student Assessment (PISA) came to fruition as this global consensus on testing was emerging. PISA was established by the Organization for Economic Co-operation and Development (OECD) in 1997, and the first PISA test was conducted in 2000. Since 2000, PISA has been administered every three years to assess the skills of 15-year-olds in science, mathematics, reading, collaborative problem solving, and financial literacy. According to Daniel Wagner, PISA was designed to "meet the need for data on student performance that would be readily comparable at the international level"[102] The OECD characterizes PISA as an assessment that:

"…draws on content that can be found in curricula across the world and looks at students' ability to apply knowledge and skills and to analyze, reason, and communicate effectively as they examine, interpret and solve problems. PISA does not prescribe or promote any one curriculum nor is it constrained by the need to find common denominators."[103]

Though PISA is unique because it was created by an international organization that is not solely dedicated to education, many aspects of PISA's development and rise to prominence

[102] Daniel A. Wagner. "Smaller, Quicker, Cheaper: Improving Learning Assessments for Developing Countries" *UNESCO: International Institute of Educational Planning* (2011): 177.2
[103] OECD. "PISA FAQ" Web. Accessed 05 Mar. 2017. <http://www.oecd.org/pisa/pisafaq/>.

mirror the general trends in testing and assessment. First, the OECD's creation of PISA illustrates the increased prevalence of international organizations. In addition, the majority of OECD members are developed countries, but the OECD also aims to "work closely with emerging economies."[104] This power dynamic further demonstrates the strong influence wielded by developed, primarily western nations, in the global IO network. While the OECD originally focused on economic initiatives, education has taken on an increasingly important role in the OECD's agenda. As mentioned earlier, globalization and neoliberalism have challenged national sovereignty and arguably weakened the ability of national governments to control economic outcomes.[105] As a result, nations have increasingly come to view human capital as a key source of competitive advantage of national economies. The creation of PISA arguably signifies an attempt by the OECD to capitalize on this new perception by providing a tool for measuring the knowledge of students—a country's future human capital.

As the OECD sought to establish its place in the network of international organizations and incorporate educational initiatives in its agenda, it "created a niche as a technically highly competent agency for the development of educational indicators and comparative educational performance measures."[106] Unlike the European Union (EU) or the World Trade Organization (WTO), the OECD does not have the legal or monetary capacity to impose policies at the national level within member nations. Nonetheless, the OECD has become an immensely influential international organization by adopting what Kerstin Martens terms, "a scientific approach to political decision making," which exemplifies Max Weber's theory about the

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[104] OECD "Members and Partners" Web. Accessed 16 Mar 2017. <http://www.oecd.org/about/membersandpartners/>.
[105] Sotiria Grek. "Governing by numbers: the PISA 'effect' in Europe" *Journal of Education* Policy. (2009); 24(1): 28.
[106] Sotiria Grek. "Governing by numbers: the PISA 'effect' in Europe" *Journal of Education* Policy. (2009); 24(1): 25.

rationalization of bureaucracy.[107] The OECD has created an array of rankings and indicators in multiple policy arenas that use statistics, reports, and studies to create an OECD brand that conveys objective, technical expertise.

In the arena of education, PISA was one of the most important products of this framework. Developed as part of the OECD's turn toward comparability and scientific thought, PISA produces measurable results and rankings. While some scholars might claim PISA is a helpful, necessary tool that allows progress to be measured, others[108] argue that the OECD capitalized on its measurability and used it to "construct a global educational policy field through governance by comparison." The legitimacy of educational indicators has come to be taken for granted, which has made international assessments like PISA seem ever more necessary as countries strive to achieve the best scores.

The OECD asserts that PISA is a unique international test because it can help stakeholders address important public policy issues; it looks beyond school curricula to assess students' ability to apply knowledge and skills; and it collects information about students' motivations and learning strategies. It's also important to reiterate that PISA assesses students that are typically at the end of their secondary school career, while many other tests assess primary school students.

PISA has several goals and objectives, but it remains unclear what implications and conclusions can justifiably be drawn from PISA results. Two of the primary objectives of PISA—as claimed by the OECD—are to provide a stable point of reference that allows countries

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[107] Kerstin Martens, Dennis Niemann, Janna Teltemann. "Effects of international assessments in education—a multidisciplinary review" *European Education Research Journal*. (2016); 15(5): 520.
[108] Sotiria Grek. "Governing by numbers: the PISA 'effect' in Europe" *Journal of Education* Policy. (2009); 24(1): 25.
Kerstin Martens, "How to become an influential actor — The 'comparative turn' in OECD education policy. *Transformations of the state and global governance*. ed. K. Martens, A. Rusconi, and K. Lutz. (2007) 41.

to monitor the evolution of their education system, and to inform education policy decision-making within countries.[109] According to the OECD, PISA findings:

"allow policymakers around the world to gauge the knowledge and skills of students in their own countries in comparisons with those in other countries, set policy targets against measurable goals achieved by other education systems, and learn from policies and practices applied elsewhere."[110]

Clearly, PISA is not simply a test; it is constructed under a policy-oriented framework that is meant to be adopted by participant countries if they desire to improve their PISA scores and appear competitive in the global world order.[111] The OECD has also asserted that PISA is capable of creating cross-national comparisons, assessing the extent to which a nation's education system has succeeded in preparing students for adult life, and identifying best practices in education based on models of countries with high scores.[112] Yet the makers of PISA have qualified such assertions by claiming that PISA "cannot identify cause-and-effect relationships between policies/practices and student outcomes" and that the differing circumstances in participating countries and economies renders it impossible and inappropriate to "cut and paste" one country's education models into another country."[113] Thus it seems that there are several

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[109] OECD. "PISA—The OECD Program for International Student Assessment" Paris: Organization for Economic Co-Operation and Development. (2007): 17. PDF. Accessed 16 Mar 2017. <https://www.oecd.org/pisa/pisaproducts/37474503.pdf>.

[110] OECD. "PISA 2015: Results in Focus" Paris: Organization for Economic Co-Operation and Development. (2016): 3. PDF. Accessed 16 Mar 2017. < https://www.oecd.org/pisa/pisa-2015-results-in-focus.pdf>.

[111] Sotiria Grek. "Governing by numbers: the PISA 'effect' in Europe" *Journal of Education* Policy. (2009); 24(1): 28.

[112] OECD. "PISA—The OECD Program for International Student Assessment" Paris: Organization for Economic Co-Operation and Development. (2007): 11, 12. PDF. Accessed 16 Mar 2017. <https://www.oecd.org/pisa/pisaproducts/37474503.pdf>.
OECD. "PISA FAQ" Web. Accessed 05 Mar. 2017. <http://www.oecd.org/pisa/pisafaq/>.

[113] OECD. "PISA 2015: Results in Focus" Paris: Organization for Economic Co-Operation and Development. (2016): 3. PDF. Accessed 16 Mar 2017. < https://www.oecd.org/pisa/pisa-2015-results-in-focus.pdf>.

possible uses for PISA, but a lack of definitive answers regarding the comparability of PISA scores and the practical insights that can be gained from such comparisons. Scholars like Nancy Perry and Kadriye Ercikan have attempted to address this gap by investigating the proper contextualization and use of PISA scores.[114]

Despite the lack of clarity that surrounds PISA scores, an increasing number of countries participate in PISA, and significant media attention is given to PISA scores when they are published. After PISA was first administered in 2000, many government officials and scholars quickly came to regard PISA as the "most comprehensive and rigorous international assessment of student knowledge and skills," and used the rankings it produced to judge the success of countries' education systems.[115] In 2015, over 29 million 15-year-olds in 72 participating countries and economies completed the assessment.[116]

The mass media clambers to interpret and publish the results of PISA studies, which sensationalizes the results. Any news headline that praises Finland's education system, mentions Chinese students soaring ahead in math, or claims that the United States lagging behind in science is likely referencing PISA scores. Overall, PISA results now receive a "very high profile within national media" which gives the assessment a place of authority in the minds of

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OECD. "PISA FAQ" Web. Accessed 05 Mar. 2017. <http://www.oecd.org/pisa/pisafaq/>.

[114] Nancy Perry and Kadriye Ercikan, "Moving Beyond Country Rankings in International Assessments: The Case of PISA" *Teachers College Record*. (2015): 117: 1-10.

[115] Andreas Schleicher, "Seeing the United States Education System through the Prism of International Comparisons," *Middle School Journal*. (2009); 40:12.

[116] ** Not all entities that participate are nation states, and conversely, not all participating countries have a truly representative sample of students that take the test. For example, Hong Kong and Macao are both scored separately from China. And Argentina is assigned a score even though only students in Cuidad Autonoma de Buenos Aires are tested.
OECD. "PISA 2015: Results in Focus" Paris: Organization for Economic Co-Operation and Development. (2016): 3. PDF. Accessed 16 Mar 2017. < https://www.oecd.org/pisa/pisa-2015-results-in-focus.pdf>.

policymakers.[117] As mentioned earlier, scholars are still debating about the proper implications and contextualization of PISA, thus the media simplification and dramatization of PISA scores is concerning. This media sensationalism highlights the need to understand the background of PISA and its place in the broader human development agenda.

This section has detailed the trends that led to the rise in national and international testing, and presented evidence that the development of the Program for International Student Assessment (PISA) exemplifies these larger trends in three key ways: PISA is administered by an international organization that epitomizes the heavy influence of the west in the global network of IOs; the OECD's use of PISA as an education indicator to measure national education systems illustrates the tendency toward bureaucratic rationalization; and the competition between nations to attain the best scores reinforces the conception of education as a way to gain economic competitive advantage. Furthermore, there is reason to believe that the OECD developed educational indicators like PISA in part to establish itself within the IO network as the preeminent technical expert and policy informant to member nations. PISA is certainly aimed at affecting education policy within participant nations, and it has garnered enough media attention to become an important consideration in the minds of policymakers. The question remains however, what role—if any—PISA has in the post-2015 human development agenda.

Case Study: PISA and the 2030 Human Development Agenda

Thus far I have discussed the evolution of the concept of development from simple growth measurements into the human centered, comprehensive development agenda that the world set for itself in 2015 through the Sustainable Development Goals (SDGs). Though scholars

[117] Sotiria Grek. "Governing by numbers: the PISA 'effect' in Europe" *Journal of Education* Policy. (2009); 24(1): 28.

are still debating whether the goals and indicators of the agenda should be framed to emphasize qualitative or quantitative results, countries are already working to achieve Sustainable Development Goal 4, which emphasizes equity and quality in education. I have also provided a background on the phenomenal rise in national and international assessment since the 1980s, which largely resulted from globalization, prevailing neoliberal theories of development, the trend of bureaucratic rationalization in public policy, and the tendency to frame education as a central tenet of economic advantage. The Program for International Student Assessment (PISA) originated and gained international prominence in the midst of this movement, which used western influence and the global network of International Organizations to push a consensus on the value and necessity of testing.

Though the SDGs set an agenda for the world to achieve by 2030, recent national events and elections might indicate that the world's appetite for globalization and neoliberalism is shifting, and the atmosphere in which the post-2015 agenda was set has already changed. In the past two years alone, events such as the British vote to leave the EU, the election of Donald Trump and prominence of other populist leaders like Marine Le Pen, Norbert Hoffer, and Nigel Farage, the near failure of the trade deal between the EU and Canada, and the U.S. withdrawal from the TPP have caused some scholars to question the durability of globalization and neoliberalism.

This section will use PISA as a case study to examine the possible implications—specifically for human development and the place of education in the agenda—of this potential shift in the tide of globalization and neoliberalism. As an initiative that gained prominence in the prime of these two global trends, PISA provides an interesting lens to discuss the evolving human development agenda and potential broader global shifts. This section will start by

analyzing general criticisms and defenses of PISA using examples of its implementation and effects in Europe, Latin America, and Asia Pacific (APAC).[118] After examining the initial response to PISA in these regions, the future prospects for PISA as part of the human development agenda will be discussed. Finally the current context of changing attitudes on globalization and neoliberalism will be further discussed and examined to properly contextualize the discussion on the future of PISA and education within the human development agenda.

PISA Praise and Criticism from Europe, Latin America, and Asia Pacific

Like any other prominent international initiative, the Program for International Student Assessment has many proponents and critics. There are several common themes of the criticisms surrounding PISA: statistical validity, oversimplified and decontextualized results, sensationalism and misrepresentation of scores by the media, and misuse of PISA scores to support ill-considered reforms. On the other hand, proponents of PISA cite positive and comprehensive education reforms that have emerged in wake of PISA scores, increased ability to track equity and quality, support offered for evidence-based policymaking and scholarly policy recommendation, identification of successful models and practices, basis for gauging success of policies and reforms, and evaluation of national progress as positive attributes of PISA. This section looks at the experiences of several geographic regions and specific countries within them to evidence these praises and critiques.

I. Europe

[118] This section is not meant to assess the impacts of PISA in every region of the world, but rather pull from national examples and regional trends surrounding the implementation and effects of PISA. Europe, Latin America, and Asia Pacific are discussed because they contain many countries that participate in PISA, with ample literature analyzing PISA results and influences. For example, in Africa, only two countries participated in PISA in 2015 (Algeria and Tunisia); therefore Africa has been excluded from analysis.in this section.

As will be the case in each of the three regions, both the positive and negative effects of participating in PISA are exemplified in Europe. Within the European Union, the European Commission (EC) heavily relies on PISA data, and sponsors a substantial proportion of PISA expenses for its members.[119] As the OECD has developed its technical indicators and administrative capacity, it has become increasingly close with the EU as officials leverage the OECD's data collection capabilities for their own initiatives. According to Sotiria Grek's[120] interview with an unnamed "key policy actor" for the Education Directorate of the European Commission:

"We [the Commission] have meetings very regularly [with the OECD board] and have even joined projects now. We work very closely with them on evidence-based policy making."[121]

Not only has PISA been an influential tool for collecting data, its results have also shaped the perspectives of European scholars, policymakers, and educators alike. The unexpectedly high scores that Finland received after the first round of PISA provides a striking example of this influence. What some scholars have called "the Finnish miracle of PISA" not only took Finland by surprise, but also thrust Finnish school systems and education practices into the international spotlight.[122] Previously, Finland often imitated German and other foreign models for education reform, but the outstanding PISA scores yielded by Finnish students at once legitimized Finnish education practices and affirmed the success of the country's education model. Consequently, educators from Europe and around the world clamored to understand the key to Finland's education success. The Finnish education model has been

[119] Sotiria Grek. "Governing by numbers: the PISA 'effect' in Europe" *Journal of Education* Policy. (2009); 24(1): 32.
[120] Grek is a research fellow at the Centre for Educational Sociology at the University of Edinburgh.
[121] Sotiria Grek. "Governing by numbers: the PISA 'effect' in Europe" *Journal of Education* Policy. (2009); 24(1): 32.
[122] Sotiria Grek. "Governing by numbers: the PISA 'effect' in Europe" *Journal of Education* Policy. (2009); 24(1): 28.

thoroughly explored since the first PISA results, and its success has largely been attributed to its emphasis on educator training and expertise, educator and school autonomy (supported by the absence of national tests and presence of flexible national grading guidelines, an irony that has been pointed out by scholars), high-morale and innovative environments for students and instructors, and comprehensive schooling.[123] Thus many educators travel to Finland to observe and analyze Finnish practices, in hopes that they might be able to learn and apply Finnish practices and philosophies to their own classrooms.

Several important influences of PISA are exemplified by Finland's experience. First it is important to note that policymakers and educators assumed Finland had done something worthy of emulation to get its high PISA scores, which demonstrates the widespread acceptance of PISA and even its taken for granted-ness as an indicator for quality education practices. Thus the tests results reshaped European notions about education and education policy. Second, PISA scores revealed to Finnish policymakers that their models and practices were effective, something they did not assume on their own (demonstrated by their tendency to borrow educational practices from other nations). There is a general acceptance that PISA scores can identify when a country has good practices or when it is heading in the right direction, which is viewed as a useful, positive aspect of PISA. Lastly, Finland's example shows the commonly held notion that high performing countries can be a model for other countries to adopt in order to improve their own educational system. While most scholars and

[123] Välijärvi, J., P. Linnakylä, P. Kupari, P. Reinikainen, and I. Arffman. "The Finnish success in PISA – And some reasons behind it." Jyväskylä: Institute for Educational Research, University of Jyväskylä. (2002): 42. PDF.
Andreas Schleicher, "Seeing the United States Education System through the Prism of International Comparisons," *Middle School Journal*. (2009); 40:12-13.

the OECD itself recognize that education models cannot merely be cut from one context and pasted into another, PISA's ability to identify successful practices is beneficial for providing potential models and solutions for other countries to consider.

While PISA has many proponents in Europe that support its potential uses and positive effects, there are also critics who have identified instances in which PISA results sparked hasty ill-considered reforms in education. In Germany, rather than emulating Finish models in response to shockingly low PISA scores in 2000, German officials proposed urgent reforms that focused on developing standards for measuring student competencies and implementing large-scale assessments.[124] These proposals resulted in several programs that were a direct response to the PISA testing model: Chemie im Kontext (CHIK), Physik im Kontext (PIKO) Steigerung der Effizienz des mathematisches-naturwissenschaftlichen Unterricht (SINUS), and a series of national tests of learning outcomes.[125] The surprising scores received a great deal of media attention, and the reforms put teachers under increasing pressure to get results out of their students. It is important to note that some scholars questioned the statistical validity of PISA results, but it seems that the shock to German officials and the general public conscience was commanding enough to override these criticisms.[126]

The German response to PISA exemplifies three prominent critiques of PISA: its statistical validity, the dramatization of scores by the media, and unjustified or inappropriate policy responses based on PISA results. Multiple scholars of various nationalities have

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[124] Sotiria Grek. "Governing by numbers: the PISA 'effect' in Europe" *Journal of Education* Policy. (2009); 24(1): 29.
[125] Sotiria Grek. "Governing by numbers: the PISA 'effect' in Europe" *Journal of Education* Policy. (2009); 24(1): 29.
[126] Joachim Wuttke. "Uncertainties and Bias in PISA" PISA zufolge PISA – PISA According to PISA. *Reihe Schulpadagogik und Padagogische Psychologie* (2007) 6:1.

questioned the statistical validity of PISA. Some scholars, for example, argue that there are statistical extrapolations used to calculate PISA scores that invalidate the results.[127] While these critiques highlight the discrepancy between what some scholars, educators, and policymakers assume PISA scores measure versus what PISA scores and methodologies actually account for, they do not stop the relentless media scrutiny of PISA scores. PISA is administered every three years, and each time the scores make many national headlines. In Germany, the scores of the first PISA test received 687 pages of press attention.[128] Scholars assert that the media oversimplifies the results, turning the scores into a "popular horse race…that simply ranks nations."[129] Thus the media's uncritical acceptance of scores and simplified dissemination of rankings overrules the criticism that scholars put forth. Ludwig Pongratz of Universitat Darmstadt in Germany terms this "PISA shock," which has a major impact on policymaking and the public consciousness.[130] Germany's experience reveals the negative consequences that PISA can bring about when its criticisms are overlooked, and when results are oversimplified, taken out of context, and interpreted inappropriately. Overall, the Europe's experience with and response to PISA exemplifies both the criticism and praise that PISA has received.

II. Asia Pacific

In the Asia-Pacific (APAC) region, scholars have found that, like in Europe, countries have come to rely on PISA scores and data to assess the performance of their national education

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[127] Svend Kreiner and Karl Christensen, "Analyses of Model Fit Robustness. A New Look at the PISA Scaling Model Underlying Ranking of Countries According to Reading Literacy," *Psychometrika*. (2014); 79: 210-231.
[128] Sotiria Grek. "Governing by numbers: the PISA 'effect' in Europe" *Journal of Education* Policy. (2009); 24(1): 29.
[129] Todd Milford, Shelley P. Ross, and John O. Anderson, "An opportunity to better understand schooling: the growing presence of PISA in the Americas" *International Journal of Science and Mathematics Education*. (2010); 8: 468.
[130] Ludwig Pongratz. "Voluntary Self-Control: Education Reform as a governmental strategy" *Educational Philosophy and Theory* (2006); 38(4): 471.

system, and inform education policy decisions. In a study that aimed to understand the impact of PISA on policy initiatives, Petra Lietz et al. identified and examined 68 studies published between 1990 and 2014 that contained an "assessment-policy link" between *any* form of large-scale assessment and policy initiatives the Asia-Pacific Region.[131] They found that one in five countries for which evidence of an assessment-policy link was found were classified as high-income countries, while more than two-thirds of the countries where the studies noted a link were middle-income countries (notably India and Indonesia).[132] Almost 40% of the material indicated that the link was between PISA or another international assessment program and policymaking (50% of the evidence revealed that the link was to a national assessment program). Of the 29 total references to international assessments, PISA was mentioned 25 times—more than any international assessment program. These results demonstrate PISAs prevalence among high and middle-income nations. At the same time, they also demonstrate either PISAs lack of influence in low-income countries, or a simple lack of participation to begin with. This could indicate larger problems for PISA's ability to encourage development at all levels.

Additionally, the study revealed that the main goals and uses of PISA in the Asia-Pacific region are to measure and ensure quality, to measure and ensure equity, and to ensure accountability in education.[133] Thus in APAC, the utilization of PISA to inform or affect policy rests on the assumption that it can assess quality and promote equity. When the results of PISA are properly contextualized, these are not unfair assumptions about PISAs capabilities. PISA is arguably most beneficial for a nation to benchmark against itself, and check its own

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[131] The study excluded academic papers that used PISA results to produce policy recommendations

[132] Pedra Lietz, Mollie Tobin and Dita Nugroho. "Understanding PISA and Its Impact on Policy Initiative: A review of the Evidence" *What Can Pisa 2012 Data Tell Us?*, ed. L. M. Thien et al. (Rotterdam, The Netherlands: SensePublishers, 2016) 187.

[133] Pedra Lietz, Mollie Tobin and Dita Nugroho. "Understanding PISA and Its Impact on Policy Initiative: A review of the Evidence" *What Can Pisa 2012 Data Tell Us?*, ed. L. M. Thien et al. (Rotterdam, The Netherlands: SensePublishers, 2016) 190.

improvement over time. As an international exam that does not have 'high stakes' for students or sanctions for schools that perform poorly, it offers an opportunity to test that is not plagued by the pressure to perform. Furthermore, PISA included questionnaires for the students that offer an unprecedented amount of knowledge regarding the factors that affect educational outcomes; this has important implications for improving equity in education.

Within the Asia Pacific region, China provides an interesting example of the utilization of PISA data to affect education policy and reform. Chinese students who participate in the PISA test were limited to Shanghai residents before 2015, and they came in at the top of PISA rankings in 2009 and 2012. Despite their fantastic performance, officials have indicated that Shanghai will eventually withdraw from PISA testing.[134] This has been partially attributed to the intense criticism that China has received for testing only wealthy Shanghainese students. Officials have also claimed that China will be enacting education reforms and a "green evaluation" system that will de-emphasize the significance of test scores and emphasize student motivation and engagement, with the aim of reducing boredom, anxiety, and the educational burden placed on Chinese students. Scholars have argued that Chinese education officials have selectively used and even "re-interpret[ed]" PISA data to "highlight the existing problems of academic burden and 'school choice fever' that validate the need for reform."[135]

China's experience with PISA brings to light a few issues. While commenting on the nature of the reforms being attempted in China is beyond the scope of this thesis, it is important to note that officials are being accused of misconstruing PISA data to legitimize and build support for

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[134] Valeria Strauss. "No. 1 Shanghai may drop out of PISA" *Washington Post*. 26 May 2014. Web. 01 Apr 2017. < https://www.washingtonpost.com/news/answer-sheet/wp/2014/05/26/no-1-shanghai-may-drop-out-of-pisa/?utm_term=.2d9d855d12a2>.

[135] Charlene Tan. "PISA and education reform in Shanghai" *Critical Studies in Education*. Published online: 06 Feb 2017 Web. Accessed 28 Mar 2017. <http://www.tandfonline.com/doi/full/10.1080/17508487.2017.1285336?scroll=top&needAccess=true>.

ongoing reforms. This is not a completely unique circumstance. In her aforementioned article on the effects of PISA in Europe, Sotiria Grek claimed that government officials in Scotland mainly used PISA results to "justify and reinforce the reasoning for measures and policies already under way."[136] Thus officials can reference the ostensibly unbiased and robust evidence provided by PISA to enact reforms that would otherwise be contested. Since PISA results are meant to inform policy but are not directly prescriptive, they can and have been interpreted—or misinterpreted—to serve the desires of policymakers rather than inciting thoughtful analysis and true reform. This misconstruing of PISA results highlights one of the prominent criticisms of PISA: it is an oversimplified metric that can be misused. At the same time, the response of other APAC countries exemplifies one of PISA's strongpoints: when properly contextualized, PISA results can be used to help assess quality and equity in an education system, which is the primary goal of SDG 4.

III. Latin America

In the years after PISAs inception in 2000, Latin America experienced unprecedented growth and social progress. The GDP in Latin America grew by 52.8% from 2000 to 2013, public social expenditures increased, and almost 80 million people were lifted out of poverty.[137] However, social inequality remains an issue in Latin America. In the period between 2000 and 2015, the education agenda in Latin America experienced significant changes, one of which was the renewed centrality of educational systems; during the 2000s Ministries of Education were slowly re-centralized, and education was given a prominent place on the agenda.[138] While many Latin

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[136] Sotiria Grek. "Governing by numbers: the PISA 'effect' in Europe" *Journal of Education* Policy. (2009); 24(1): 31.
[137] Alex Rivas. "Latin America after PISA: Lesson Learned about Education in Seven Countries (2000-2015)" Buenos Aires: *CIPPEC-Natura-Instituto Natura*. (2015): 6.
[138] Alex Rivas. "Latin America after PISA: Lesson Learned about Education in Seven Countries (2000-2015)" Buenos Aires: *CIPPEC-Natura-Instituto Natura*. (2015): 9.

American countries pursued reforms that emphasized provision of free schooling materials, flexible learning environments, educational justice, and school autonomy, one of the most defining initiatives was the adoption of new assessment mechanisms. Quality assessment policies gained "starring roles" in the new education agenda.[139]

Inspired in part by the PISA model, countries like Chile, Brazil, Mexico and Columbia moved from "general diagnostic evaluations" to tests with "a great impact on the regulation of education systems."[140] Leaders in these countries utilized assessments to set goals, rewards and sanctions, and create standards for reaching the next grade level. The imitation and embrace of this standard-based testing regime signals the credence that Latin American countries gave to international assessment programs. Furthermore, participation in international exams like PISA made Latin American education systems vulnerable to foreign scrutiny. Consequently, teachers and students were subjected to increasing pressure to perform from both internal and external sources. In cases like this, however, the need for testing becomes self-reinforcing; officials design tests to track progress so students can do well on other assessments, and the only way to know if students have 'improved' is by conducting more testing. While some Latin American countries became extremely reliant on data-driven results and incentives, others like Argentina, Uruguay, and Peru, were less affected by the emerging consensus on testing.

Many leaders in Latin America looked to PISA results to verify the success of their reforms. While Latin American countries typically obtain relatively poor results when compared with the rest of the participating countries, when the scores are analyzed over time, the results are far more encouraging. From 2000 to 2012, Latin America was the region with the greatest reduction

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[139] Alex Rivas. "Latin America after PISA: Lesson Learned about Education in Seven Countries (2000-2015)" Buenos Aires: *CIPPEC-Natura-Instituto Natura*. (2015): 10.
[140] Alex Rivas. "Latin America after PISA: Lesson Learned about Education in Seven Countries (2000-2015)" Buenos Aires: *CIPPEC-Natura-Instituto Natura*. (2015): 10.

of the equity gap, and also the region with the highest increase in PISA scores across all the quartiles of socioeconomic status.[141] This kind of analysis, which ignores the rack and stack nature of rankings and utilizes previous scores as a benchmark, properly contextualizes PISA so that it is a useful tool for informing policy.

Some scholars have used PISA data to talk about quality and equity in Latin American schools. One study, for example, utilized PISA questionnaire answers to show that characteristics of a student's environment (sex, age, and economic, social, and cultural status of students and schools) can explain close to 30% of the variation in test performance in Latin America.[142] Though PISA is often critiqued for the decontextualized implications it prompts, this study was able to use PISA data to focus primarily on context and provide evidence for the need to pursue greater equity in Latin American education. This is an example of how PISA data can be thoughtfully analyzed to aid evidence-based policymaking, and also encourage the pursuit of comprehensive reforms that fit the human development agenda. Overall, PISA models showed strong influence in Latin America, both as an impetus to develop further assessment mechanisms, and as a tool to evaluate the various reforms enacted from 2000-2015. While the assessment regime inspired by PISA might not have been fully justified, the examples of contextualization of PISA results that we have examined, and the scholarly analyses that emphasize the large opportunity to increase equity in education show some positive influences of PISA in the region.

PISA and Sustainable Development Goal 4

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[141] Alex Rivas. "Latin America after PISA: Lesson Learned about Education in Seven Countries (2000-2015)" Buenos Aires: *CIPPEC-Natura-Instituto Natura*. (2015): 18.

[142] Rolando Avendano, Felipe Barrera-Osorio, Sebastian Nieto-Parrra, Flora Vever "Understanding student performance beyond traditional factors: Evidence from PISA 2012" OECD Development Centre Working Papers. *Organization for Economic Cooperation and Development (OECD*). (2016) 331: 1.

Clearly, PISA is utilized in many different ways, and for various purposes depending on the perspective and the role of the analyst; scholars, policymakers, the media, and even the average citizen all find value in different aspects of PISA, often selectively viewing or presenting parts that suit their own goals. While the previous section offers support for methods of utilization that use context, critical thought, and balanced analysis to promote comprehensive reforms, policy suggestions and/or general assessments of the state of education, the reality is that as long as PISA exists, it will remain a tool to be exploited as the user sees fit.

Now, however, we will focus on examining whether or not PISA can be used to serve the needs of the 2030 Development Agenda, specifically Sustainable Development Goal 4, which has shifted the discussion from the previous focus on *access* to education to *quality* and *equity* in education. The OECD has insisted that PISA can play role in the achievement of the ambitious 2030 Agenda. In a post by the OECD titled "OECD and the Sustainable Development Goals: Delivering on universal goals and targets," the OECD notes several ways in which its initiatives support the 2030 Agenda, one of which reads:

"Facilitating follow up and review: Inclusive follow up and review mechanisms will be essential to incentivize action and learning around the 2030 Agenda. OECD country assessments, peer reviews and peer learning mechanisms across a range of policy fields…play a key role in sharing learning and knowledge, improving policies and practices, and building trust and mutual respect among partners. The OECD is adapting its range of assessment and learning mechanisms – including the Programme for International Student Assessment, or PISA—to the new 2030 Agenda"[143]

[143] OECD. "OECD and the Sustainable Development Goals: Delivering on universal goals and targets." Organization for Economic Co-operation and Development (2016) Web. Accessed 31 Mar 2017. < http://www.oecd.org/dac/sustainable-development-goals.htm>.

This rhetoric makes it evident that the OECD wants PISA to be a component of the 2030 Agenda; they have even started a new initiative called PISA for Development (P for D), to expand and emphasize PISA's possible connections to the Sustainable Development Goals. According to the OECD:

"PISA for Development aims to increase middle- and low- income countries' use of PISA assessments for monitoring progress towards nationally-set targets, for the analysis of factors associated with student learning outcomes, particularly for poor and marginalized populations, for institutional capacity-building and for monitoring international targets in the Education 2030 framework developed within the UN's thematic consultations"[144]

It seems as though the OECD is hoping to capitalize yet again on its capacity for data collection and status as a technical expert. Perhaps what worked before with European Commission will work again as the OECD attempts to make PISA a key indicator and tool for measuring progress of the 2030 Agenda's goals.

Before any further discussion on PISA's possible role in the 2030 Agenda, it must be conceded that PISA measures high school-age students, while the rhetoric of the development agenda typically focuses on young primary school students. The list of indicators for SDG 4—provided in Table 2 on page 32—is no different, but I have identified six different indicators where the PISA assessment and/or the PISA questionnaire could possibly applicable: 4.3.1, 4.4.1, 4.5.1, 4.6.1, 4.7.1, 4.a.1. These indicators either vaguely identify the target population as "youth and adults", or aim to measure "all levels" of education, thus PISA could be utilized as a measurement tool. While some indicators—e.g., 4.a.1—seek information that is not currently measured by PISA (access to adapted infrastructure for students with disabilities, or access to

[144] OECD. "PISA for Development" Organization for Economic Co-operation and Development (2016) Web. Accessed 07 Jan 2017 <http://www.oecd.org/pisa/aboutpisa/pisafordevelopment.htm>.

basic hand washing facilities) the PISA questionnaire has the potential to be modified to address these topics. Regarding the other indicators, 4.1.1, 4.2.1, and 4.2.2 all specifically apply to primary age students; indicator 4.b.1 refers to increasing development assistance flows for scholarships, and 4.c.1 refers to teachers, thus PISA would not be a suitable tool to measure these indicators.

In 2016, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) published a manual titled "Laying the Foundation to Measure Sustainable Development Goal 4," which mentions PISA as a tool for tracking certain indicators of SDG 4.[145] The report directly mentions assessments when addressing targets 4.1, 4.2, 4.4, 4.5, 4.6, and 4.7. The prevalence of testing within the report indicates UNESCO's belief that assessments are a key source of educational data. The report mentions PISA specifically when discussing indicators 4.4, 4.5, and 4.7, indicating that PISA is one of the "efforts to measure [information and communications technology] (ICT) skills," that it is one of the "international initiatives to measure equity in education" and that it is a "possible source" for measuring global citizenship education.[146] Even though UNESCO characterized PISA as one of multiple initiatives that countries could use to track the aforementioned indicators—rather than making it an official measurement tool—it seems that UNESCO believes PISA is a reliable potential component of the 2030 Agenda. As a branch of the organization that set the 2030 Agenda, UNESCO can significantly influence how countries pursue and track their efforts to achieve the SDGs. Thus

[145] UNESCO. "Sustainable Development Data Digest: Laying the Foundation to Measure Sustainable Development Goal 4" UNESCO Institute for Statistics, Montreal (2016): 11. Web. 06 April 2017. <http://www.uis.unesco.org/Education/Documents/uis-sdg4-digest-2016.PDF>.
[146] UNESCO. "Sustainable Development Data Digest: Laying the Foundation to Measure Sustainable Development Goal 4" UNESCO Institute for Statistics, Montreal (2016): 64, 77, 68. Web. 06 April 2017. <http://www.uis.unesco.org/Education/Documents/uis-sdg4-digest-2016.PDF>.

the multiple mentions of PISA in the report on measuring SDG 4 result in an informal endorsement of PISA's utility and role in pursuing the Sustainable Development Agenda.

Beyond examining if PISA *can* be utilized as a measurement tool in the 2030 Agenda based on simple applicability and rhetoric, the implications of using the PISA assessment also need to be discussed. Notably, using PISA to track SDG 4 has important implications for the continuing debate on setting goals with a qualitative or quantitative framework. For the most part, PISA falls on the quantitative side by producing scores that essentially rank countries' national education systems. Many stakeholders in education worry that invoking a comparative international assessment as a measurement tool for SDG 4 could lead to a standardized global curriculum that causes countries ignore localized, contextually appropriate initiatives in order to gain higher scores on the PISA test. By reducing an entire country's education system to a set of scores in science, reading, and mathematics that are highly publicized by the media, PISA results have the potential to supersede all other targets on the agenda, and cause any goals that are not readily measurable to become a secondary concern for policymakers. Overall, the concern is that the quantitative nature of PISA results promotes the use decontextualized, oversimplified data and creates unintended effects.

At the same time, PISA does have potential to provide detailed, contextual information to aid policymakers. As a result, PISA could emphasize the development agenda's shift from access to equity and quality. PISA not only allows stakeholders to assess the quality of their national education system and gauge improvement over time, but it also provides data that can highlight discrepancies in student populations that affect learning outcomes. PISA's questionnaire element provides policymakers with a plethora of useful information. It covers various aspects of learning and education: student backgrounds, student motivations, teacher motivations, school

governance and policies, school resources, school curriculum.[147] As exemplified in the previous section on PISA's influence in Latin America, PISA data enables scholars to analyze various aspects of a student's environment and background that affect educational outcomes.

While PISA provides opportunities to enhance quality and equity in education there is concern that implementing PISA as a tool to measure SDG 4 could limit education systems as well. Even the UNESCO report on measuring SDG 4 acknowledged that "much has been written about the problems associated with 'teaching to the test' and how this can reduce the scope of the curriculum taught in classrooms."[148] As seen in many countries that have instituted high-stakes testing, teachers experience increased pressure to yield high student scores, and thus alter their curriculum to focus primarily on the objectives that will be on the test. This concern is especially pertinent when the exam is international, and designed by an organization that consists primarily of developed countries. Furthermore, PISA for Development targets low- and middle-income countries, which would suddenly become vulnerable to all the pressures and scrutiny that OECD governments experience based on PISA results. A test or assessment signifies what is "important" or "valuable" in education, and an international test promotes a global convergence in education curriculum. This concern highlights the inherent difficulty in designing an international assessment, and also questions whether assessments are actually capable of improving learning.

Overall, PISA has the potential to be a useful component to track SDG 4; as an OECD initiative it benefits from the technical capabilities and data collection capacity of a large, experienced international organization; it fits within the rhetoric of the 2030 Agenda and

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[147] OECD. "PISA 2018 Draft Analytical Frameworks" Paris (2016): 104-117. Web. Accessed 06 Apr 2017. < https://www.oecd.org/pisa/data/PISA-2018-draft-frameworks.pdf>.

[148] UNESCO. "Sustainable Development Data Digest: Laying the Foundation to Measure Sustainable Development Goal 4" UNESCO Institute for Statistics, Montreal (2016): 57. Web. 06 April 2017. <http://www.uis.unesco.org/Education/Documents/uis-sdg4-digest-2016.PDF>.

measures the target audience of several indicators; and it also provides an opportunity to analyze quality and equity in education when used in the right context. Unfortunately, PISA data is often oversimplified and misused, which has caused great concern regarding its potential effects on national curriculums and education policy. These concerns are especially valid when one considers the platform that the 2030 Agenda would provide for promoting and propagating the use of PISA. Countries would feel evermore obligated to participate in order to support the pursuit of the 2030 Development Agenda. However, UNESCO avoids identifying any one international assessment as an official measurement tool for the SDG 4 indicators, which prevents international assessments from dominating the agenda, and downplays their necessity. At the same time, UNESCO does offer supportive rhetoric regarding PISA and international assessments. This support combined with the OECD's determination to insert PISA into the 2030 Agenda will likely result in increased participation in the Program for International Student Assessment. As the UNESCO report acknowledges:

"In the end, the overarching goal of SDG measurement is to encourage the collection and use of data on children's learning to improve policies and practices. It is therefore essential to find a politically feasible approach towards resolving the technical issues highlighted [in the report]."[149] Thus UNESCO admits the reality of the necessity of measurement due to the way the Sustainable Development Goals were framed. The concerns surrounding PISA and measurement should not be ignored; measurement techniques should continue to improve in response to criticism, and results should be presented and utilized in a way that demonstrates analytical thought and consideration for context; under these circumstances PISA can be a useful tool in

[149] UNESCO. "Sustainable Development Data Digest: Laying the Foundation to Measure Sustainable Development Goal 4" UNESCO Institute for Statistics, Montreal (2016): 58. Web. 06 April 2017. <http://www.uis.unesco.org/Education/Documents/uis-sdg4-digest-2016.PDF>.

realizing the goals of the 2030 Development Agenda as long as the UN ensures that it does not become the central standard of measurement.

Conclusion: The Longevity of PISA and the Sustainable Development Goals

PISA and the current development agenda are the products of a complex combination of several thematic trends: an evolving and increasingly comprehensive conception of development, intense globalization, a world order influenced by international organizations and western nations, neoliberalism, and an emphasis on scientific and rationalized policymaking. Yet recent events signal a possible change in the trends and global atmosphere that brought the current development agenda to fruition; Brexit, the increased presence of populist political figures, and difficulties passing new trade deals arguably signify increasing nationalist sentiments and distrust of the "beneficial" nature of globalization and neoliberalism.

This changing environment has already caused concern about the longevity of the 2030 Agenda. For example, the Comparative and International Education Society, based in the United States, released a statement on November 14, 2016 following the US Presidential Election, which read:

"In the wake of the US Presidential campaign and election, the Comparative and International Education Society (CIES) issues a call to the education community to renew its commitments to global engagement, educational and cultural exchanges, free inquiry, and mutual understanding. CIES reaffirms its commitment to the value of US engagement with the world in mutually beneficial relationships that advance the common good. And, it encourages educational researchers, practitioners and policymakers to advocate for equitable educational policies and practices that improve social and economic development, that prepare students to live in our globalized world, and that model and advance respectful dialogue across difference.

Now – as we have throughout our 60 year history as an academic association dedicated to promoting comparative education and related areas of inquiry and activity – CIES affirms the importance of and need for cross-cultural engagement guided by values of equality, mutual respect, and regard for the most vulnerable."[150]

Several weeks after Britain voted to leave the EU, IMF Managing Director Christine Lagarde said in a speech at the Center for Global Development:

"The greatest challenge that we are facing now is the risk of the world actually turning its back on global cooperation…the cooperation that has served us well."[151]

Lagarde claimed that troubling global economic conditions were fueling a rise in nationalism and populism that could threaten the pursuit of the Sustainable Development Goals. Indeed, there has already been backlash against the global development agenda in the United States; On March 28th 2017, Donald Trump signed an executive order that nullified the Clean Power Plan created under former President Barack Obama, which placed restrictions on coal-fired power plants in favor of establishing wind and solar farms. Without this plan, the U.S. has essentially announced that it will not comply with the global carbon emissions reduction goals set in the 2015 Paris Climate Agreement. According to the UN's Sustainable Development Goals website:

"Implementation of the Paris Agreement is essential for the achievement of the Sustainable Development Goals, and provides a roadmap for climate actions that will reduce emissions and build climate resilience."[152]

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[150] CIED Admin. "Statement from CIES Following the US Presidential Election" Comparative & International Education Society. Web. Accessed 06 Apr. 2017 <http://www.cies.us/news/317465/Statement-from-CIES-Following-the-US-Presidential-Election.htm>.

[151] Rajesh Mirchandani. "Populism and Nationalism Are Threat to Cooperation—Podcast with IMF's Christine Lagarde" Center for Global Development (2016) Web. Accessed 08 Apr 2017. <https://www.cgdev.org/blog/populism-and-nationalism-are-threat-global-cooperation-podcast-imf-christine-lagarde>.

Though Mr. Trump has not formally withdrawn from the Paris Agreement, events such as this are a very present threat to the durability of the 2030 Agenda. We know that the creation of the 2030 Development Agenda, and the rise of testing occurred at a critical juncture between evolving conceptions on human development, neoliberal ideas infiltrating non-economic policy arenas, and an increasingly globalized world where countries felt intense pressure to follow international trends. Though there is no way to know for sure if these trends will change, it is important to consider the obstacles that SDG 4 and PISA might face.

There are several underlying forces that have created backlash against globalization and neoliberalism. Spikes in violent conflict that result in high levels of forced displacement; increasing economic disparities within countries as labor's share of GDP has fallen to historic lows in the developed world; environmental damage and corporate mistreatment of workers that has caused many to question the wisdom of letting the market have free reign; global economic crisis and slowdown.[153] All of these trends have caused individuals across the world to question the benefits of neoliberalism and even globalization in general. As blue-collar and middle-class workers watch the salaries of top executives exponentially soar while they wait for the next round of job cuts due to outsourcing, it becomes hard to see the benefits of globalization and international cooperation. Local backlash against the neoliberal ideology was growing even in the late 1990s; the Asian financial crisis of 1997—in which financial liberalization in Asian nations like Thailand, South Korea, and Indonesia eventually resulted in a speculative investment bubble —showed the extreme economic volatility created by neoliberal policies. Furthermore,

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[152] United Nations. "Goal 13: Take urgent action to combat climate change and its impacts" UN Web Services Section. Web. Accessed 09 Apr 2017. <http://www.un.org/sustainabledevelopment/climate-change-2/>.

[153] James Fryer. "Rich man, poor man." *The Economist*, (18 Jan 2007): 3. Web. Accessed 26 Mar 2017. <http://www.economist.com/node/8554819>.

Robin Broad. "The Washington Consensus Meets the Global Backlash: Shifting Debates and Policies" *Globalizations*. (2004); 1(2): 132-134.

nations that were once touted for their successful adoption of neoliberal policies—i.e. Mexico and Argentina—experienced economic collapse and crisis. These failures fostered a trend of electing nationalist leaders that opposed neoliberal ideas in Latin America, and a global questioning of the neoliberal development model.[154]

Overall, globalization and neoliberalism have created 'winners' and 'losers.'[155] Globalization is painful for civil society, and the pains are intensified during times of economic difficulty. While some scholars have argued that the very rhetoric of neoliberalism and globalization reinforces the necessity and inevitability of these institutions, making them extremely durable, many countries have seen growing domestic opposition and nationalism. Recent events demonstrate that some individuals are questioning whether or not international integration and cooperation is mutually beneficial.

While it could be argued that the consensus on international testing and the aims to improve quality and equity of education are jeopardized by the current international climate, there is also reason to believe that PISA and SDG 4 will endure this uncertain time. First, PISA participation rates have consistently increased over time from 43 participating countries/economies in PISA 2000, to 71 countries in PISA 2015. Furthermore, 80 countries and economies are currently scheduled to partake in PISA 2018 according to the PISA website, which indicates that participation rates are certainly not diminishing.[156] To account for the chance that many countries and/or economies are withdrawing from PISA tests while even more are joining from year to year, I examined and compared the participants from 2012, 2015, and

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[154] Robin Broad. "The Washington Consensus Meets the Global Backlash: Shifting Debates and Policies" *Globalizations*. (2004); 1(2): 132-134.
[155] James Fryer. "Rich man, poor man." *The Economist*, (18 Jan 2007): 3. Web. Accessed 26 Mar 2017. <http://www.economist.com/node/8554819>.
[156] OECD. "PISA 2018 Participants" Web. Accessed 09 Apr 2017. <http://www.oecd.org/pisa/aboutpisa/pisa-2018-participants.htm>.

2018 as listed on PISA's website. From 2012 to 2015, three countries/economies withdrew from PISA: Cyprus, Liechtenstein, and Serbia.[157] Based on the participants for PISA 2018 listed on PISA's website on April 9th 2017, China and Tunisia are the only countries that participated in PISA 2015 and are not currently registered for PISA 2018—though this does not guarantee that they will not participate. Based on the increasing rates of participation, even into 2018, it does not seem like PISA or the global consensus on testing is being affected by the backlash against globalization.

It is important to note, however, that historically there is often a lag between the changing of leading development models and the development agenda. As seen in the literature review at the beginning of this paper, development models are often affected by global moods as scholars and policymakers sense the need to adjust their conception of development based on the success—or lack thereof—of existing models. Scholarly discourse ensues, new measures are adopted, and once the discussion settles, the development agenda often follows suit, taking on new influences and aspects.

In spite of this potential lag, it seems that there is a persistent acceptance of PISA, in addition to consistent efforts and renewed commitments to realizing Sustainable Development Goal 4. Right before the SDGs were adopted, the UNESCO's 2014 World Conference on Education for Sustainable Development (ESD) convened with more than 1,000 participants, including 76 representative of UNESCO member states, NGOs, academia, the private sector and UN agencies from over 150 countries. At this conference, the Global Action Programme on Education for Sustainable Development was launched, and gained commitments from

[157] OECD. "PISA 2015 Participants." Web. Accessed 09 April 2017. <http://www.oecd.org/pisa/aboutpisa/pisa-2015-participants.htm>.

stakeholders representing 80 countries.[158] In 2015, the International Commission on Financing Global Education Opportunity was founded; it included more than 20 world leaders—of which five were former presidents and prime ministers and three were Nobel Prize recipients—who have dedicated themselves supporting the SDG 4 by bridging the finance gap for global education; the commission presented a report titled *Learning Generation* in 2016.[159] The most recent Global Education Monitoring (GEM) Report, released in 2016, reiterated the need for "education for people and planet" and was well received.[160] In May of 2016, the Education Cannot Wait Fund was officially launched, representing a "new global fund to transform the delivery of education in emergencies…[aiming] to reach all crisis-affected children and youth with safe, free, and quality education by 2030."[161] The fund received with more than $90 million in pledges at its launch event, including pledges made by donor representatives from the United Kingdom, the United States, Norway, the European Union, and the Netherlands.[162] The recent inception of these initiatives indicates that the international community is still committed to SDG 4, not simply by making promises but also buy pledging funding and support, especially to the world's most vulnerable children.

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[158] UNESCO. "World Conference on ESD." Web. Accessed 09 Apr 2017. < http://en.unesco.org/themes/education-sustainable-development/what-is-esd/un-decade-of-esd/world-conference>.

[159] Global Partnership for Education. "Global Partnership for Education welcomes new Commission on Financing Global Education" Press Release 24 Sep 2015. Web. Accessed 09 Apr 2017 <http://www.globalpartnership.org/news-and-media/news/global-partnership-education-welcomes-new-commission-financing-global-education>.

[160] Jordan Naidoo. "Agenda 2030—SDG4 Education 2030—One Year On: Challenges and Opportunities." *NORRAG News 54*. (2016). Web. Accessed 09 Apr 2017. < https://norrag.wordpress.com/2017/01/24/agenda-2030-sdg4-education-2030-one-year-on-challenges-and-opportunities/>.

[161] Education Cannot Wait. "Education Cannot Wait" Web. Accessed 09 Apr 2017 <http://www.educationcannotwait.org/>.

[162] Kolleen Bouchane. "Education Cannot Wait Fund Officially Launched: More Than $90 Million Pledged." *The Huffington Post*. (26 May 2016). Web. Accessed 09 Apr 2017. <http://www.huffingtonpost.com/kolleen-bouchane/education-cannot-wait-fun_b_10144906.html>.

Furthermore, individual countries have shown commitment to pursuing SDG 4. According to an edition of NORRAG News titled "Education Training and Agenda 2030: What Progress One Year On?":

"Countries as diverse as Belize, Germany, Ghana and Vietnam among many others have undertaken reviews to align national development plans with the SDGs. With regard to SDG 4 specifically, a host of countries have had consultations and aligned or started the process to align national education plans with SDG 4 including: Afghanistan, Bangladesh, Bhutan, Cambodia, China, Cook Islands, Côte d'Ivoire, Djibouti, Egypt, Fiji, Federated States of Micronesia Islands, Gambia, India, Kenya, Lesotho, Lao People's Democratic Republic, Maldives, Malaysia, Mauritius, Morocco, Myanmar, Namibia, Nepal, Nigeria, Oman, Pakistan, Palau, Palestine, Qatar, Saudi Arabia, South Sudan, Sudan, Swaziland, Syria, Tanzania, Thailand, Tonga, Uganda, United Arab Emirates, Uzbekistan, Zambia and Zimbabwe."[163]

Many of the consultations have acknowledged the difficulties in taking actions to realize such a complex and ambitious educational goal, but their efforts demonstrate a commitment to SDG 4 despite the turbulent international environment that threatens the overall development agenda.

While part of this commitment might indeed stem from purely humanitarian sentiments, part of the motivation to pursue and improve education also originates from the notion that quality education is essential to the economic success of modern nations. So long as education is framed as a central component of a nation's future economic success, it will continue to be regarded as an essential part of the development agenda. And when an instrument like PISA

[163] Jordan Naidoo. "Agenda 2030—SDG4 Education 2030—One Year On: Challenges and Opportunities." *NORRAG News 54*. (2016). Web. Accessed 09 Apr 2017. < https://norrag.wordpress.com/2017/01/24/agenda-2030-sdg4-education-2030-one-year-on-challenges-and-opportunities/>.

exists, countries are able to measure themselves and gauge just how strong their competitive advantage in human capital is. Moreover, the high degree of media coverage surrounding PISA results reinforces the perceived need to participate and achieve high scores. These are key factors that differentiate SDG 4 from other SDGs that might be in jeopardy if there is a strong shift in the global mood regarding globalization, neoliberalism, and international cooperation. Rather than being perceived as a goal that countries should strive for in order to be considerate members of the world order, SDG 4 is seen as an imperative because quality and equity in education have the potential to signal the future economic success of a nation.

This analysis is not meant to condone the use of PISA to invoke obligatory sentiments that most stakeholders and policymakers feel towards education so that SDG 4 can be realized. It is however, meant to demonstrate the durability of PISA and SDG 4. The United Nations and UNESCO have avoided endorsing PISA as an official measurement tool to track SDG 4 indicators, yet their rhetoric suggests support or at least trust in PISA, which validates its use in the eyes of policymakers. Though implementing PISA has potentially negative consequences, most of them originate from hasty reactions to PISA results without proper analysis and contextualization. Thus it is important to continuously conduct research and propose critiques to enhance PISA and its applicability to the Sustainable Development Goals; it is also essential that the OECD and the PISA board respond to these critiques with thoughtful analysis and modification of PISA when applicable. Furthermore, it must be made very clear by both PISA and UNESCO that policymakers should place PISA results in their proper context, and use the rich data that is available through PISA to assess not only the scores and rankings, but also the factors that most greatly affect student outcomes.

PISA is a tool that has the potential to aid the realization of the 2030 Agenda; the amount of media attention the test receives might even help ensure the longevity of SDG 4, thus it is important that thorough research is conducted and clarification given regarding the appropriate use of PISA results, since it appears that PISA is here to stay. Ultimately, it is essential for the UN to ensure that PISA does not become the primary metric used to assess SDG 4; it must remain one of many possible tools for countries to utilize when evaluating the state of their education system. PISA should not be the dominant or principal standard because it simply does not capture the multitude factors that comprise a successful education system. By limiting the role of PISA in the current human development agenda, the UN will encourage countries to benefit from PISA results and data while ensuring that countries persistently pursue both qualitative and quantitative educational goals, allowing them to maintain a nuanced, comprehensive approach to developing education around the world.

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